

Managing Projects to Completion

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INNOVEST SME

Accelerating Small Business

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*It must be considered
that there is nothing more
difficulty to carry out nor
more doubtful of success
nor more dangerous to
handle than to initiate a
new order of things.*

MACHIAVELLI

PREFACE

In the past few decades, organizations have discovered something incredible: principles that have been used to create enormous successes in large projects can be applied to projects of any size to create amazing success. As a result, many employees are expected to understand project management techniques and how to apply them to projects of any size.

This book will give you an overview of the entire project management process, as well as key project management tools that you can use every day.

*Do not repeat the
tactics which have gained
you victory, but let your
methods be regulated by
the infinite variety of
circumstances.*

SUN TZU



KEY CONCEPTS (I)

Before we get started, let's make sure we all understand just what we mean by a project and by project management. We'll also look at what a project manager's role is.

WHAT IS A PROJECT?

A project is a limited endeavor (meaning it has specific start and finish dates) that is undertaken to meet particular goals and objectives. Projects are different than processes or everyday operations, which are repetitive, permanent, or semi-permanent functional work taken on to produce products or services.

All successful projects share the following characteristics:

- Clear goals
- Defined ownership/responsibility
- Timeline
- Dedicated team
- Defined methodology
- Controlled execution
- Completion evaluated based on original plan

- Linked to business objectives
- Supported by an organization's management team

WHAT IS PROJECT MANAGEMENT?

Project management is the combined art and science of planning, organizing, and managing resources to get a particular project done on time, within budget, and with the results that the organization set out to achieve.

There are many types of project management designed for different scenarios and different industries. This book will focus on the traditional method, used by the Project Management Institute, which follows five process groups.

WHAT IS A PROJECT MANAGER?

A project manager is the person responsible and accountable for accomplishing the stated project objectives. Key project management responsibilities include creating clear and attainable project objectives, building the project requirements, and managing the triple constraint for projects.

The project manager is often required to perform a juggling act, balancing what the customer wants, and needs with what the team can provide in a particular time frame and with a particular budget. A successful project manager has a hodgepodge of skills and continues learning.

Key skills include:

- Leadership
- Negotiation
- Influence and persuasion
- Project management
- Communication
- Time management
- Stress and anger management

Although you do need project management skills to be a project manager, you don't need to be a project manager to use project management skills. You will find uses for most of these tools in your day-to-day life, both personal and professional.

PRACTICAL ILLUSTRATION

Filipe had spent the last hour interviewing Sarah for the project manager position, and he had been impressed with the answers that she had given. When asked how she would handle too much or too little data, she reported that she knew what to pay attention to and what to ignore. She had experience setting, observing, and re-evaluating project priorities frequently, and just from speaking with her, Filipe could tell that she commanded authority naturally.

Filipe asked, *“Sarah, in the past, how have you worked with stakeholders?”*

Sarah answered, *“I care about communication and want opinions from stakeholders involved. It’s equally important though to also be aware of how communication is being received by those shareholders as well.”*

Filipe smiled at the answer. The rest of interview went well, and he could tell that Sarah was the perfect person for the project manager position.

*Life is a
do-it-yourself project.*

NAPOLEON HILL



KEY CONCEPTS (II)

Now that we understand what we mean by projects, project management, and project managers, let's look at some of the other concepts related to projects. This chapter will look at the Project Management Institute, a global project management group that publishes and promotes project management standards, and its core ideas.

ABOUT THE PROJECT MANAGEMENT INSTITUTE (PMI)

The Project Management Institute is a global association for the project management profession. Since being founded in 1969, they have been at the forefront of working with businesses to create project management standards and techniques that work.

Their core ideas include:

- The Project Management Body of Knowledge(PMBOK), which we will discuss in a moment
- Five process groups, which outline the path a project should take
- Ten knowledge areas, which outline various parts of each process group
- The triple constraint, which illustrates how a project is balanced

ABOUT THE PROJECT MANAGEMENT BODY OF KNOWLEDGE (PMBOK)

The Project Management Body of Knowledge (PMBOK) is the PMI bible. It includes a detailed overview of the processes and knowledge areas promoted by the PMI as best practice within the project management discipline.

This global standard allows consistent procedures, methods, and processes to be applied to any project and measured equally, no matter what the actual project is about.

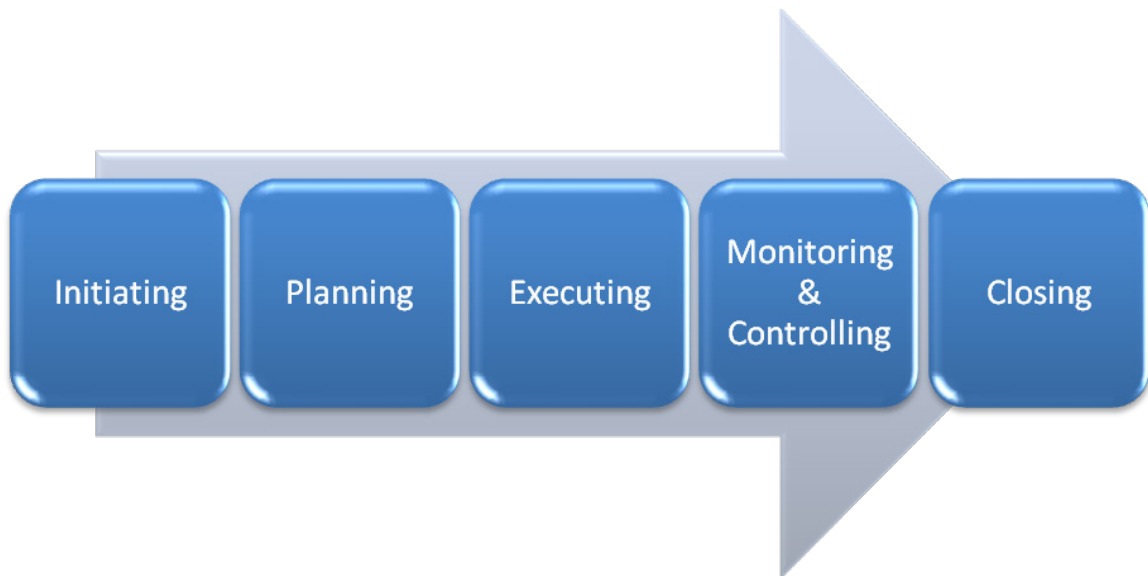
The guide is built around five process groups and ten knowledge areas.

THE FIVE PROCESS GROUPS

These processes form the core structure of any project. Although they are illustrated here as a continuous process, they can overlap and interact throughout a project.

Processes are described in terms of:

- Inputs (documents, plans, designs, etc.)
- Tools and Techniques (mechanisms applied to inputs)
- Outputs (documents, products, etc.)



THE TEN KNOWLEDGE AREAS

The PMBOK guide focuses on ten knowledge areas that are crucial to the project management processes. The areas are:

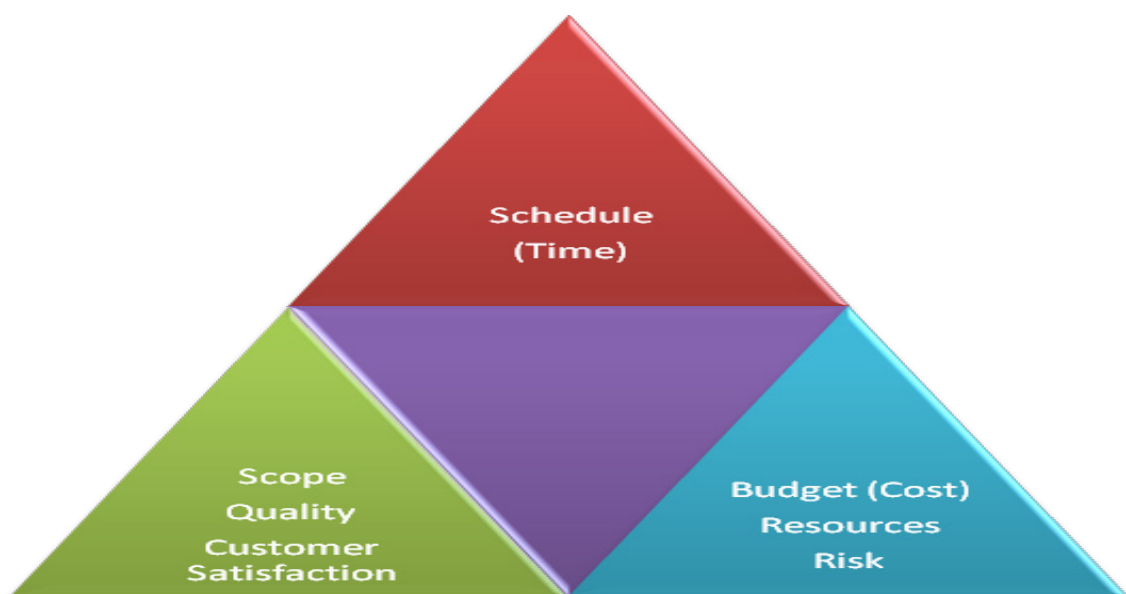
- Integration Management
- Procurement Management
- Scope Management
- Risk Management
- Time Management
- Communications Management
- Cost Management
- Human Resources Management
- Quality Management
- Stakeholder Management

Each knowledge area contains some or all of the project management processes. For example, Project Procurement Management includes:

- Plan Procurement Management
- Conduct Procurements
- Control Procurements
- Close Procurements

THE TRIPLE CONSTRAINT

The Triple Constraint illustrates the balance of the project's scope, schedule (time), and budget (cost). During the planning phase of a project, the project management team defines the project scope, schedule (time), and budget (cost) of a project. As the process continues, the project managers discover that there may be changes or adjustments to be made in one of these areas. When this happens, the other factors of the triple constraint are likely to be affected as well.



For example, if the budget (cost) increases, it is logical to assume that the scope and schedule (time) will increase as well. The same thing happens if the budget (cost) decreases; the scope and schedule (time) will decrease too.

It is the job of the project manager, and sometimes the project team, to identify how a change to a single element will change the other elements.

PRACTICAL ILLUSTRATION

Hector, a member of the project management team, knocked on Greg's office door. Greg, the project manager, motioned for him to come inside. Greg asked, *"How can I help you, Hector?"*

Hector sighed, *"I looked into the costs for the project, like you asked me. It looks like the costs are going to be greater than we expected."*

Greg nodded and said, *"Thanks for letting me know, Hector. When the cost increases, many times the scope and the time increase as well. It's good that we're finding this out early. Let me look at the specific costs that you found."*

Greg and Hector looked over the budget. They were able to bring the issue to the team the very next day, and from there, they brainstormed ways to decrease the cost and modified their scope and time.

*No sensible decision
can be made without
taking into account not
only the world as it is, but
the world as it will be.*

ISAAC ASIMOV



INITIATION (I)

The first phase of project management is initiation. This is where the project starts to take shape. Stakeholders and team member's work together to identify wants and needs, and then the project team creates a plan to accomplish the objectives with the time and budget available. This chapter will explore the first part of that process: identifying what success will look like for your particular project.

IDENTIFYING YOUR STAKEHOLDERS

A stakeholder is someone who has an interest in the development and/or outcome in the project. This person is usually only involved at key project gateways, such as project initiation and evaluation. Their main role is to provide feedback and guidance.

When you are identifying stakeholders, think outside the box. Ask other members of the team and the organization, *"Who else should we involve in this? Who might be affected?"*

If it turns out you missed a stakeholder, ask them for their feedback. You may not be able to change the project's course at that point, but you may receive valuable information on possible opportunities or potential issues.

ASSESSING NEEDS AND WANTS

When stakeholders and other project members begin identifying the goals of the project, encourage them to list any and all possibilities. If the sky is the limit, what would they want the project to accomplish?

Then, they should decide which items are necessary for the project's success (needs), and which are "nice to haves" (wants). If the list is lengthy, wants and needs can be prioritized to help the project team identify the most important tasks. (Remember, this is not a final list, just brainstorming to kick things off.)

To wow your stakeholders, keep this list on hand during the project. Keep an eye out for ways to incorporate wants and maximize their value.

SETTING A SMART PROJECT GOAL

Each project should have a goal statement. SMART is a convenient acronym for the set of criteria that a goal must have in order for it to be realized by the goal achiever.

- **Specific:** In order for the project team to achieve a goal, stakeholders must be very clear about what they want. As Jack Canfield says, *"Vague goals produce vague results."*
- **Measurable:** It's crucial that you are able to track your progress towards your goal. That's why all goals need some form of objective measuring system so that you can stay on track and become motivated when you enjoy the sweet taste of quantifiable progress.

- **Agreed Upon:** All team members and stakeholders must agree on the goal.
- **Relevant:** The goal must be relevant to the business' purpose.
- **Timed:** In order for a project to be considered a project, it must have a specific start and end date.

Some examples of good project goals:

- To upgrade the existing sales system to EasySell 5.1 by January 1, 2015.
- To begin production of a new widget by September 1, 2016.
- To build a new 5,000 square foot office facility and have all staff relocated to it by December 31, 2015.

CREATING REQUIREMENTS AND DELIVERABLES

Now that we have some idea of what we want our project to accomplish, we can begin setting requirements. Requirements outline exactly what a project must do in order for it to be considered successful. Remember, good requirements are highly specific. Although they are particularly useful in IT projects, they should be used for any project that you want to succeed.

For example, let's say one goal for our project is this: *"To reduce the time to process inbound orders to 15 minutes by January 1, 2015."* A corresponding project requirement could be, *"Implement version 5.0 of Superior Records Processing on all 14 customer service representative stations."*

As part of this, you should then be able to create your deliverables. These define what people can expect to hold in their hands after the project is complete. These deliverables will help you set clear expectations at the beginning of your project, and maintain a clear idea of what you are doing as you execute the project.

PRACTICAL ILLUSTRATION

Fareed frowned as the project goal he had created the day before was sent back to him for revisions. He tried not to dwell on the fact that he needed to rewrite and instead focused on delivering a well-worded, specific goal.

He remembered what he'd learned from the seminar on project management. The goal needed to be SMART. That meant specific, measurable, agreed upon, relevant, and timed.

Fareed went back over the project goal, and he saw immediately where he needed to change the wording.

Fareed's new goal read: The goal of our project is to upgrade the existing database system to WordForWord 6.1 by December 2015.

The new goal was accepted, and for all future project goals, Fareed remembered to use the acronym SMART.

*All you need is
the plan, the road map,
and the courage to press on
to your destination.*

EARL NIGHTINGALE



INITIATION (II)

Once you have an idea of who your stakeholders are and what the project will achieve, it's time to put it all in writing. This chapter will look at four key project documents: the statement of work, the project requirements document, the project planning worksheet, and the project charter.

CREATING A STATEMENT OF WORK

What is the Statement of Work? The SOW defines what the project will do and when it will be done. It forms a binding contract of expectations between all project stakeholders. As such, it should be created by the project team, and then signed off by the team and the stakeholders. It can be used to create other project documents, including the project charter. The Statement of Work often varies widely between organizations. However, the following basic elements should be included.

- **Project Team:** Include all members of the project team and each person's role, as well as a list of stakeholders and the sponsor.
- **Project Details:** Include the name of the project, its estimated start and end date, and the client(s) involved. (Every project should have a client, whether it is an internal or external customer.)
- **Purpose:** What is the purpose of the project? Try to keep this as simple and concrete as possible. If a business case or a cost-

benefit analysis has been prepared, those documents should be referenced (but not included) here.

- **Scope:** What will the project encompass? What items will the project not encompass? This section is extremely important as it will help avoid miscommunication and disappointment down the road.
- **Goals, Deliverables, and Requirements:** Include your SMART goals, deliverables, and requirements here.
- **Basic Finances:** List applicable rate and payment schedule information.
- **Assumptions:** List any assumptions that have been made in the planning thus far.
- **Agreements:** List any agreements that will apply to this project, such as union contracts or professional service agreements.

COMPLETING THE PROJECT PLANNING WORKSHEET

Once the basics of the project are laid out, it's time to put together your project planning worksheet. While the Statement of Work will remain static throughout the project, your worksheet will be a living, breathing document. As such, there are parts that you will not complete until after the Planning phase, but this worksheet will give you one place to capture the essential information about your project.

Like the SOW, you may need different fields based on your project and your organization, but we have included a sample worksheet on the next page.

PROJECT PLANNING WORKSHEET

Part I: Basic Information

Project Name:	Project Team Members:
Estimated Project Start Date:	
Estimated Project End Date:	
Budget Amount (if known):	

Part II: Project Goals

List your SMART goals here.

Part III: Milestones

Milestone	Target Completion Date

Approved by:

COMPLETING THE PROJECT CHARTER

The project charter is the final, formal project document. It establishes the project as an entity and it gives the project manager the authority to get started. For small projects, the charter may be just a few pages. For large projects, the charter itself can be hundreds of pages and can take months to build.

Just like other project documents, the charter can be customized for your organization. At a minimum, it should include the following information:

- Project name
- Project due date
- Team list, including responsibility matrix
- Stakeholders
- In scope and out of scope items
- Goals
- Requirements
- Deliverables
- Estimated cost vs. budget
- Benefits of project (including cost-benefit analysis if appropriate)
- Milestone descriptions and dates
- Possible risks and opportunities
- Communication plans
- Assumptions and Constraints

- Plans for documenting lessons learned
- A page for sign off by the important parties

Ask your organization if they have a charter form that they would like you to use. This is especially important as a charter can be a legally binding document.

PRACTICAL ILLUSTRATION

Taylor, a new project manager, had worked tirelessly on the Statement of Work. Now came the moment where she presented the first draft of the SOW to her supervisor, Jim.

Jim said, *“This looks great, Taylor. I can tell you worked very hard on this.”* He added, *“You didn’t repeat your assumptions and kept the agreements separate from the assumptions. Also, you’ve customized this to fit our organization.”*

Taylor asked, *“Is there anything you think I should change?”*

Jim said, *“The project’s purpose and the project’s scope read as if they are the same thing. The purpose should be simple and concrete. The scope is where you can get into what the project encompasses, so the details won’t be miscommunicated to shareholders and the team.”*

Taylor took the feedback and later presented a Statement of Work where the purpose and the scope were both clear and distinct.

*Those who fail to plan,
plan to fail.*

ANONYMOUS



PLANNING (I)

Congratulations! With the completion of the SOW, planning worksheet, and project charter, the initiation phase is complete. Now it's time to plan the nuts and bolts of your project.

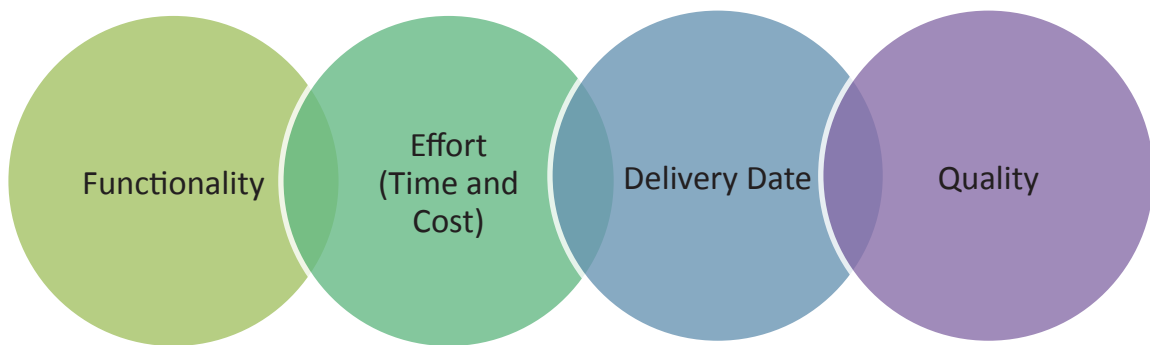
When building your plan, remember:

- Everything in the plan is a prediction.
- The only fact that you know for certain is that your plan is definitely not 100% right.
- Contingency needs to be built in to cope with the uncertainty.

MANAGING EXPECTATIONS

Each stakeholder and each project team member will have different expectations. As the project manager, you need to manage all of them. Unmanaged expectations will cause conflict and can cause the project to fail.

Expectations fall into four main categories:



Expectations for each area should be addressed in the Statement of Work, Project Planning Worksheet, and Project Charter.

Periodically reviewing these documents is important. Key checkpoints should include:

- Does everyone involved have the same understanding of the project?
- Clarify responsibilities as assigned
- Clarify the outcomes and time frame
- Clarify the requirements and budgets
- Understand the budget and schedule linkages
- Communicate to everyone who is relevant

CREATING A TASK LIST

To begin the nuts-and-bolts planning process, you must first make a list of all the tasks that are going to be done. Let's say you are going to paint a room. Tasks might include:

- Get paint samples
- Choose a paint color
- Remove all furniture
- Take off trim
- Paint trim
- Apply first coat
- Apply second coat
- Put trim back in
- Put all furniture back in

How detailed the task list becomes is up to you. We suggest writing the task list in the way that you will accomplish it. For example, if you are going to apply the first coat of paint yourself; you may want to include all steps, such as crack-filling, sanding, taping, etc. If, however, you are contracting the task out, "Apply first coat" may be the only item you need to monitor. (Your painter probably wouldn't appreciate being micro-managed!)

ESTIMATING TIME

When building your schedule, never guess times. Gather the most reliable information possible and use a scientific formula to get the best estimate. The better your estimates, the more reliable your plan will be.

This formula is considered the standard for estimating time (T_e):

$$T_o + 4T_m + T_p \frac{\quad}{6}$$

- T_m = Probable Time
- T_o = Optimistic Time
- T_p = Pessimistic Time
- T_e = Calculated Time (Best Estimate)

First, make a table, list your tasks, and fill in the estimated time for each. (We have numbered our tasks in the example on the next page for easy identification.) Time can be listed in minutes, hours, days, weeks, months, or years. You should keep the same time scale for each task.

Next, identify what the best and worst case estimates would be. Now, for each task, plug the numbers into the formula given above. The result is the estimated time.

Task	Probable Time	Optimistic Time	Pessimistic Time	Calculated Time
Get paint samples				
Choose a paint color				
Remove all furniture				
Take off trim				
Paint trim				
Apply first coat				
Apply second coat				
Put trim back in				
Put all furniture back in				

ESTIMATING RESOURCES

Now that the task list is complete, it's time to decide what resources will be used to accomplish the tasks. In project management, "resources" means people, materials, and money. For now, let's just focus on people and materials – we'll look at money in a moment.

A common method of resource listing is to list the tasks, estimated time, and resources required, all in the same table.

We have started an example here.

Task	Calculated Time	People Required	Materials Required
Get paint samples	1 hour	Me, Joe	Car
Choose a paint color	2 hours	Me, Joe	Paint Samples
Remove all furniture	1 hour		
Take off trim	½ hour		
Paint trim	1 hour		
Apply first coat	2 hours		
Apply second coat	2 hours		
Put trim back in	½ hour		
Put all furniture back in	1 hour		

How detailed you get with your resource list is up to you. For people resources, make sure you include all people who are going to be spending their time on the project, even yourself.

ESTIMATING COSTS

Our next step is to add cost information to our table. Make sure to include salary information for everyone, even project team members, and to include line item cost information for each material resource. If you

are doing a home project (as we are here), salary information will not be necessary.

Task	Calculated Time	People Required	Estimated Cost for People	Materials Required	Estimated Cost for Resources
Get paint samples	1 hour	Sue, Joe	\$0	Car	\$10 (gas)
Choose a paint color	2 hours	Sue, Joe	\$0	Paint Samples	\$0
Remove furniture	1 hour				
Take off trim	½ hour				
Paint trim	1 hour				
Apply first coat	2 hours				
Apply second coat	2 hours				
Put trim back in	½ hour				
Put all furniture back in	1 hour				

PRACTICAL ILLUSTRATION

Rebecca met with Josie, the team's project manager, about the estimated time that it would take to get customer feedback.

Josie said, *"I can see that you've put a lot of hard work and effort into this, but can I ask you how you calculated the estimated time?"*

Rebecca said, *"I'm glad you brought that up. I got the estimate by using the same amount of time it took me on the last project."*

Josie said, *"Often the amount of time a task takes on one project isn't the same as it would take on another project. This could lead to a tight deadline that can cause frustration for the team and stakeholders. Let me show you a formula that will help."*

Rebecca and Josie inputted the optimistic time, probable time, and pessimistic times into the formula to get the best estimate.

*A work well begun
is half ended.*

PLATO



PLANNING (II)

The next part of the planning phase is to bring together the nuts and bolts information that we have gathered (the tasks to be performed, plus the time, resources, and costs required for each) and to create an actual plan for executing the project.

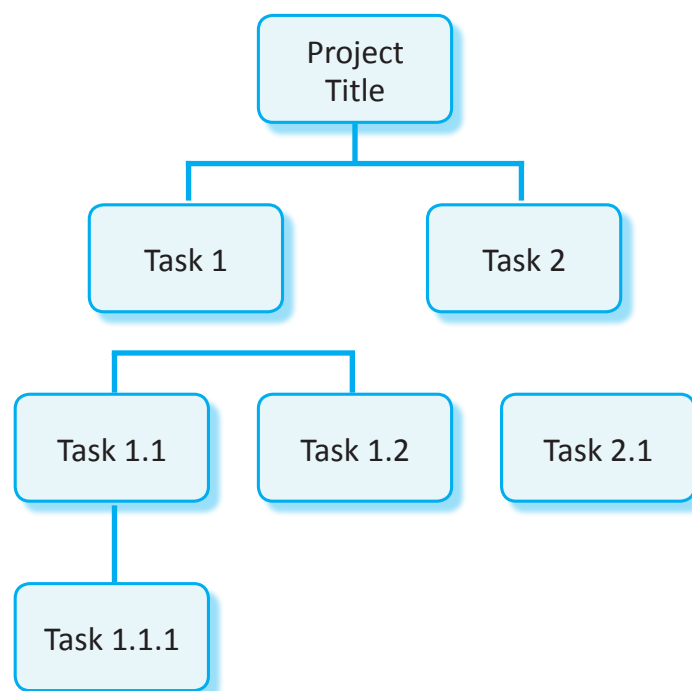
BUILDING THE WORK BREAKDOWN STRUCTURE

A work breakdown structure (WBS) is a graphical breakdown of all the work to be done in the project.

The WBS can be built in five easy steps.

- Identify the purpose of the project and write the title at the top.
- Establish the major segments of the work. Example for painting a room:
 - Gather materials
 - Prepare room
 - Paint room
 - Finish room
- Break down the segments of the work into sub-components.
- Gather materials

- Prepare room
- Paint room
- Finish room
- Continue breaking down the work until you reach the level where you will assign and monitor the project work. (Remember, if you are going to assign a task to someone, you may not need to break it down very far.)
- Review the WBS with the stakeholders and project team to ensure all items are covered.



CREATING THE SCHEDULE

The next task is to build the schedule. This will be your most important document during the project. It will grow and change throughout the project. Keep it up to date to make sure that you will meet your deadlines.

There are many scheduling tools available, which will be discussed in the next topic. For now, let's look at a simple table format – an expansion of the table that we used earlier.

The first column lists the tasks that need to be performed. This list is typically organized in the order in which the tasks will be accomplished chronologically. In addition, think of how the project might be broken up into phases, to help subdivide tasks that will be performed.

The second column specifies the duration time of each task listed. This duration might be listed in terms of days, weeks, or hours, depending on the project. Next, people and equipment will be listed, followed by start and end dates and/or times.

In order to build the schedule, you will need the availability of people and machines, and sometimes material resources. This is where graphic tools can really help out.

For our room-painting project, Joe and Sue are going to do all the work. We are going to start on Friday at 5 p.m. Here is a summary of their availabilities:

	Friday	Saturday
Joe	5 p.m.-10 p.m.	9 a.m.-10 a.m. 1 p.m.-5 p.m.
Sue	5 p.m.-10 p.m.	10 a.m.-noon 1 p.m.-5 p.m.

Here is an example schedule for our room-painting project.

Task	Calculated Time	People Required	Start Time and Date	End Time and Date
Get paint samples	1 hour	Sue, Joe	5 p.m. Friday	6 p.m. Friday
Choose a paint color	2 hours	Sue, Joe	6 p.m. Friday	8 p.m. Friday
Remove furniture	1 hour	Joe	8 p.m. Friday	9 p.m. Friday
Take off trim	½ hour	Joe	9 p.m. Friday	10 p.m. Friday
Paint trim	1 hour	Sue or Joe	9 a.m. Saturday	10 a.m. Saturday
Apply first coat	2 hours	Sue or Joe	10 .am. Saturday	Noon Saturday
Apply second coat	2 hours	Sue or Joe	1 p.m. Saturday	3 p.m. Saturday
Put trim back in	½ hour	Joe	3 p.m. Saturday	3:30 p.m. Saturday
Put all furniture back in	1 hour	Joe	3:30 p.m. Saturday	4:30 p.m. Saturday

Here are some tips to make your schedule efficient, accurate, and useful.

- Look for places where resources can perform activities simultaneously.
- Indicate milestones in your schedule. Milestones are identifiable points in your project that require no resources or time. They are

simply a key point in time. They can also help you group your project into phases. Milestones in this project might be:

1. Have paint color chosen
 2. Have room cleaned out
 3. Get painting complete
 4. Have room put back together
- If you are delivering a business project, try to include deliverables with the milestones. This way, sponsors and stakeholders have tangible results at various stages in the project, and are more likely to stay interested and committed.
 - Make sure to include lag and lead time in your tasks. In the painting project, for example, there is little to no time allotted for the paint to dry between coats. The project will definitely fall behind schedule.
 - For team projects, make a large copy of the schedule and post it where everyone can see.

CREATING A RISK MANAGEMENT PLAN

The Risk Management Plan details how to approach and manage project risks. A risk management plan should be completed for any project. All project team members and stakeholders should have a meeting to complete a first draft of the plan. This ensures everyone knows what problems could crop up.

The meeting should also identify the response options for each risk. There are four common approaches:

- **Mitigate:** Find ways to reduce the probability and impact levels of the risk.
- **Avoid:** Take steps to avoid the risk entirely. For example, if your chosen construction company may have a worker's strike soon, perhaps you could choose another company.
- **Transfer:** Transfer the responsibility for the risk to someone outside the project. This will decrease your liability, but it may also decrease your level of control, too.
- **Accept:** Accept that the risk could happen, and choose not to act. This is the best approach for risks with low probability and impact ratings.

During the project, stakeholders and team members should be encouraged to bring up new risks to the project manager. The project manager can then update the plan and communicate it to the rest of the team.

A basic risk management plan looks like this, with one row for each risk:

Risk	Date Identified	Risk Raised By	Probability Rating (/10)	Impact Rating (/10)	Response Options

CREATING A COMMUNICATION PLAN

Effective communication can make the difference between success and failure in any kind of project. Developing and maintaining a good communication plan will ensure that everyone involved in the project stays up to date, and that information is shared appropriately.

A basic template should include the what, who, where, when, why, and how for each communication item.

Example

What?	Status meetings
Who?	Project team
Where?	Whirlwind Room, Fourth Floor
When?	Every Monday at 9 a.m.
Why?	To report issues encountered last week and upcoming tasks for this week
How?	In-person

As you can see, the communication plan can be formal or informal, highly detailed or broadly framed, based on the needs of the project. Like the schedule, the plan should be maintained, updated, and shared throughout the project.

PRACTICAL ILLUSTRATION

Jasmine looked over David's project management team's schedule. She had just started mentoring him, as David proactively looked for guidance when he found out that he would be the project manager of the company's next project.

"So," David said. *"What do you think?"*

Jasmine pointed out, *"You've done a great job listing the tasks, giving deadlines, and determining milestones."* She added, *"However, you could really benefit from also adding in deliverables along with your milestones. This keeps the stakeholders interested and encouraged, when they see concrete progress."*

David said, *"That's a great idea. I'll add that in."*

Once the schedule was complete, David posted a large copy of the schedule where everyone on the team could see it. Having milestones and deliverables helped his team members, as well as the stakeholders, celebrate progress.

*Good fortune is what
happens when opportunity
meets with planning.*

THOMAS EDISON

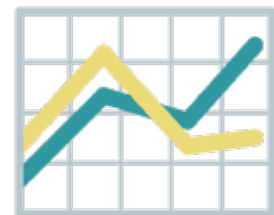


PLANNING TOOLS

In the last chapter, we looked at how to build a schedule in table format. This format will work well for small projects. However, for more complex projects, you will need additional tools. This chapter will explore four of the most popular tools, including graphical methods and Microsoft Project.

THE GANTT CHART

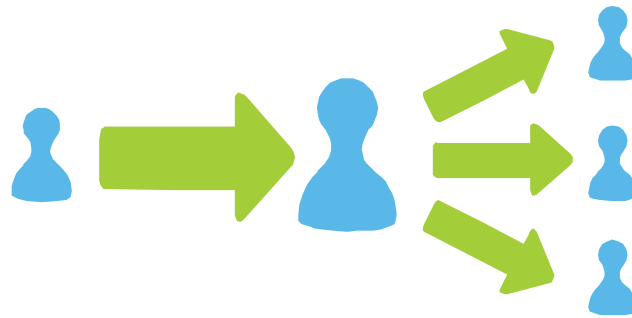
Gantt charts have become a common technique for representing the phases and activities of a project work breakdown structure, as they can be understood by a wide audience.



A Gantt chart is a type of bar chart that illustrates a project schedule. Gantt charts illustrate the start and finish dates of each task, as well as task dependencies and links. Gantt charts can be easily customized to show resources, costs, and other important information. They can also be color-coded for different task phases or responsibilities.

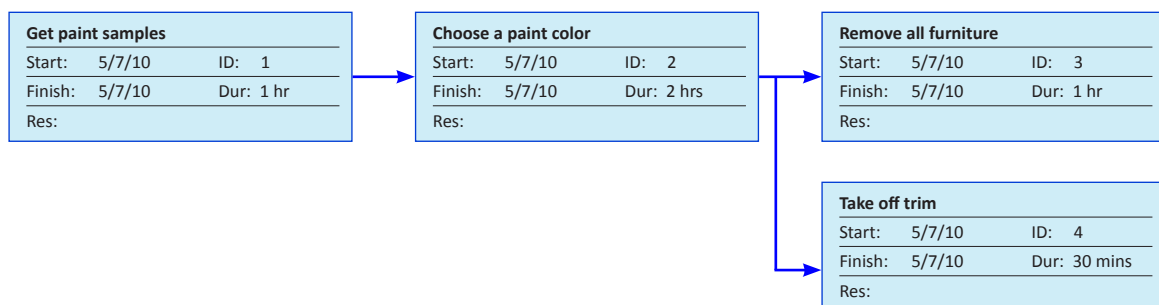
THE NETWORK DIAGRAM

A network diagram is another way of showing the path of tasks in the project. Tasks are each placed in a box and each box is placed in chronological order. Arrows are drawn from task to task, indicating the



logical progression of work. Boxes can be customized to contain any information you like, including start and finish dates, task length, cost, resources, and more. Boxes can also be color-coded based on the phase of the project; resource required, team assignment, etc.

Here is an example of a network diagram from Microsoft Project. (We have scheduled the “Remove furniture” and “Take off trim” tasks to happen at the same time for demonstration purposes.)



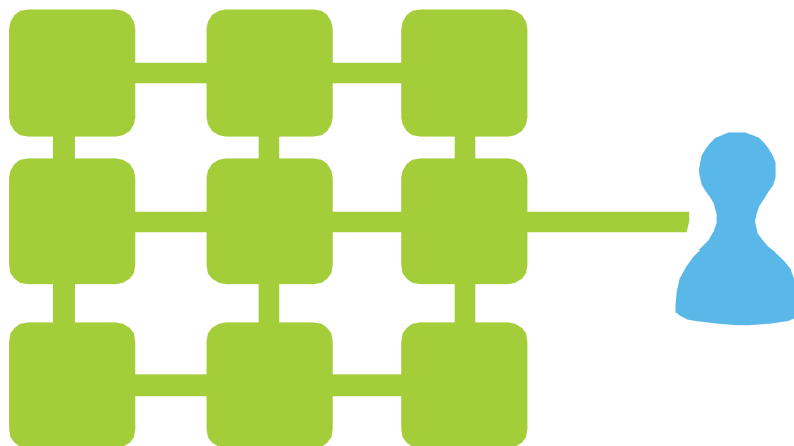
We recommend building the network diagram as a team using these steps.

- Write all steps out on sticky notes.
- Tape a large piece of paper to the wall.
- Place sticky notes in order.
- Once you think you have the right order, check to make sure lag and lead time is allowed for. Also look for ways that work can be completed simultaneously.

- Draw arrows to indicate task links. Color-code the boxes if desired.
- Post the diagram in a central location. Make a copy for reference, and keep the original drawing updated as the project progresses.

The network diagram will also help you identify the critical path: the shortest path through the project. This will help if an element of the triple constraint changes and you must alter your plan.

USING A RACI CHART



A RACI chart is an excellent way to outline who is responsible for what during the project. To start, create a chart with tasks listed on the left hand side, and resources listed across the top. Now, put the appropriate letter in each cell:

- **R:** Responsible for execution
- **A:** Approver
- **C:** Consult
- **I:** Keep informed

Example	Sue	Bob	Joe	Jane
Build widget plan	A	R	I	I
Build widget	R	A	C	I
Ship widget to customers	I	I	I	R

GOING THE EXTRA MILE: MICROSOFT PROJECT

Throughout the chapter, we have made some references to using computer software to manage projects. We have even included some diagrams from Microsoft Project, a popular project management application.

Applications like Microsoft Project are extremely useful for project managers and their teams. Microsoft Project, as an example, stores information about resources, schedules, tasks, budgets, and more; generates reports on the fly; allows you to enter and view information in numerous ways; and even allows you to collaborate with other team members.

We urge everyone, particularly new project managers, to remember that Microsoft Project is just a tool. In order to make the best use of it, you must understand how it calculates numbers and generates diagrams. Once you have a solid understanding of basic project management concepts, feel free to take the time to learn about project management software if you desire.

Remember, too, that every project requires different tools. For small projects, you may not need the sophisticated features of a software program. If you choose to grow your project management skills, however, and take on larger projects, you will appreciate the extra tools available in these applications.

PRACTICAL ILLUSTRATION

Gina met with Bob, one of her co-workers who had been a project manager for some time. She said, *“I know I need to keep tabs on who is responsible for which tasks, but I’m having a hard time keeping it all straight.”*

Bob said, *“You need to make a RACI chart.”* He drew a chart, and with Gina’s help, he added the names of the team members across the top and the tasks that needed to be completed down the first column. He continued, *“RACI stands for who is responsible, who is the approver, who is consulting, and who will be keeping informed. All you have to do is write in the corresponding letter into the chart to remember for yourself.”*

Gina said, *“Thanks, Bob. I will definitely need this, especially as we move forward.”* Gina used the tool to remain organized and increase productivity.

*You can only elevate
individual performance
by elevating that of the
entire system.*

W. EDWARDS DEMING



EXECUTING THE PROJECT

We have spent a lot of time talking about what the project will do and making plans for how to do it. Finally, it is time to get to work and put our plans into action.

ESTABLISHING BASELINES

There is actually one final task to complete before we can start work on our project. Establishing the baseline indicates the formal end of the planning phase and the beginning of project execution and control.

The baseline is your original plan, containing the original scope, cost, and time. This gives you a measuring stick throughout the project. For example, let's say that your baseline budget was \$20,000. If, after the first task, you have spent \$15,000, you know you're in trouble. You can then evaluate the situation and prepare an action plan – hopefully before things get too out of hand.

The baseline should be communicated to all stakeholders and the project team. Scope and resources can be outlined in text format. Cost and time can be displayed as a graph. Or, you can use a graphic scheduling tool

(like a Gantt chart or network diagram) to display the original plan and track where you are. (More on that in a moment!)

MONITORING PROJECT PROGRESS

As the project manager, it is your responsibility to monitor all the parts of your project to make sure they are continuing as planned. If issues arise, it is your responsibility to resolve them, or to escalate them to someone who can resolve them.

Some popular, effective methods of tracking project progress include:

- Regular status meetings
- Regular status reports
- Hands-on observation
- Recording data manually or electronically and generating reports (for example, spending to date versus total budget)

Your visual scheduling tools can also help you record project progress and communicate it to your team.

- As tasks are completed, they can be crossed off the Gantt chart and/or the network diagram.
- If new resources need to be added, they can be added to network diagram boxes.
- If tasks need to be re-scheduled, they can be moved around on the network diagram.

- Risks, accomplishments, and lessons learned can be posted next to tasks.

TRIPLE CONSTRAINT REDUCTION METHODS

Be forewarned: after all of your planning, it is very likely that one element of the triple constraint will change. Perhaps a team member has left the organization, the budget has been cut, or new technical requirements need to be met.

When approached with scope changes, don't panic! There are three established methods that you can use to decide how to alter the course of the project.

- **Crashing:** Reduce the schedule without changing the budget, or vice-versa (depending on project needs). This can be done by using cheaper resources, or by re-evaluating time estimates.
- **Fast-Tracking:** Can be done with the schedule only. Looks at the schedule to see which tasks (if any) can be completed concurrently, and where lag/lead time can be reduced or eliminated.
- **De-scoping:** Removes items from the project scope to free up time and/or money.

Make sure that you truly look at the big picture, and include short and long term benefits and consequences in your decision-making process.

Once you have performed careful analysis, gather documentation to back up your decision, clear the decision with the appropriate stakeholders,

change the project plan accordingly, and communicate the plan change to everyone involved.

PRACTICAL ILLUSTRATION

Joan sighed as she could feel her anxiety rising. *“I just didn’t anticipate that Nate would be leaving the project. How in the world are we going to get all this data entry done on time?”*

Meha, the project manager, remained cool and collected. She said, *“Let’s take some deep breaths and be sure not to panic. Let’s think outside the box. Is there any way that we could increase productivity without changing the budget or schedule?”*

Joan tried to remain calm and began to think. Suddenly she had a thought, *“I could talk to Daniella. She has an intern coming on in another couple weeks, and that intern might be interested in our project.”*

Meha smiled. *“See, we’re already coming up with possible solutions.”* They continued to brainstorm several ideas to try without having to change their budget or schedule.

*Trying is just a noisy way
of saying no progress.*

WARREN BENNIS



MAINTAINING AND CONTROLLING THE PROJECT

The fourth phase of project management is maintaining and controlling. Although it is part of the execution phase, it is so important that the PMBOK separates it out into its own set of activities. This chapter will give you some key tools for keeping your project on track.

MAKING THE MOST OF STATUS UPDATES

Regular, mandatory status meetings for all project team members should be a part of any project. These meetings will give team members a chance to connect, discuss issues, and solve problems. It will also give you the opportunity to coach team members and make sure you're on top of what everyone is doing.

Status meetings should be tied in with status reports. We recommend that both items be completed weekly or bi-weekly, depending on your project. Also, remember that meetings and reports can be brief or detailed – it all depends on what level of control you need and how big the project is.

We recommend a Friday-Monday schedule, where reports are submitted on Friday (before the end of the day) and status meetings are held on

Monday. If a holiday happens to occur, reports could be submitted on the Thursday, and meetings could take place on the Tuesday.

Status reports should contain the following items:

- Team member name
- Status report date
- Tasks planned for the previous week
- Tasks completed in the previous week
- Tasks planned for the following week
- Issues and risks identified (highlight those that require project manager attention)

Status meetings, then, are a review of tasks that each member completed for the previous week, what they have planned for the upcoming week, and what issues they have encountered or predict.

Again, status reports and meetings should be customized for your projects' needs. Team members should also know that issues should be reported to the project manager as they arise.

MANAGING CHANGE

Change management is another way of controlling your project. This process ensures that any changes, whether they are to the objectives, requirements, tasks, or design of a particular component, are approved by the project team.

At the beginning of the project, all stakeholders and team members must agree not to make any changes to the project plan or to the design of its components, and to instead follow a change management process. Then, when a change is required, a change management form is completed.

Example

Change Request Number:	Change Requested On:
Change Requested By:	Change Submitted By:
Change Details:	Tasks Affected:
Approved or Rejected?	By:

Then, the form is submitted to the project manager. The change is reviewed and a decision is made. In small projects, the review process may be done by the project manager. For larger projects, the project team or even a separate task force (typically called the Change Control Board, or CCB) is involved.

MONITORING RISKS

Remember the risk management plan that we built during the planning phase? Make sure it doesn't stay on a shelf. Continue to monitor and add to it.

Here are some additional tips for making sure risks don't ruin your project:

- Be proactive. Have meetings with stakeholders and outside parties to ensure your risk assessment is accurate and that your action plan (if you have one) is valid.
- Keep an eye out for assumptions. Make sure that they continue to hold true. Identify what could happen if those assumptions are unfulfilled.
- Keep a record of what actions you take to mitigate risks.

PRACTICAL ILLUSTRATION

Alan felt butterflies in his stomach. It was time for the project team's weekly status update meeting, and while he was prepared, he was nervous.

The project manager, Francesca, said, *"Alan, I have you assigned to update us on our external parties not delivering on time. Did you have any luck resolving this?"*

Alan sighed and said, *"Not well. I used all the solutions we came up with, and I even came up with a few on my own to try. But none of them are improving delivery time."*

Francesca said, *"I'm glad you're bringing this to our attention. Let's work as a group to brainstorm and effectively get this back on track."*

Alan nodded, relieved as his team began to brainstorm ideas. Due to weekly status meetings and updates, the risk was addressed quickly and efficiently.

*The real problem is what
to do with problem solvers
after the problem is solved.*

GAY TALESE



CLOSING OUT

You've reached the point where all the tasks in your project plan have been checked off: the widget is built, the advertisements are on TV, and boxes are being shipped to customers. Before you consider the project complete, however, there are a few more things to be done.

PREPARING FOR CLOSEOUT

As your project winds down, you may find team morale dropping, or anxiety increasing. Closure of a project can be difficult, particularly if the project has been long and/or difficult, or if team members will not be working together afterward.

To help team members get through this tough time, make sure they know what they will be working on after the project. Make sure they know who will be reviewing their performance. (If it is not you, let them know that you will pass on information about their performance to their regular supervisor. This expectation should have been set at the beginning of the project, too.) Encourage team members to come to you with questions.

CELEBRATING SUCCESSES

After the project, take time to celebrate the things that the project team did well. Try to recognize each person for their contributions and accomplishments.

Team celebrations, of course, are also an important part of project close-out. It is a great idea to have a team party. Another excellent idea is to have a close-out meeting with stakeholders, team members, and other interested parties. This provides an opportunity to review the project's accomplishments and challenges – and it ties in with our next topic.

LEARNING FROM PROJECT CHALLENGES

No project will go perfectly. There will always be a risk you didn't anticipate, tasks that run longer than they should have, project team members that didn't perform as you expected... If it can happen, it probably will!

Meeting with team members and stakeholders to identify lessons learned throughout the project is a valuable exercise for several reasons.

- It ensures everyone is aware of the challenges encountered and what was done to resolve them.
- If something is learned from a mistake or failed endeavor, then the effort put into the task is not entirely wasted.
- Apply these lessons to future projects and be more successful.
- Lessons learned should be documented and included with final project documentation.

SCOPE VERIFICATION

Another important part of project closeout is scope verification. This is where stakeholders and team members meet to determine whether or not the project did what it set out to do.

This checklist can be used as a guide for scope verification.

- Were all needs met? Were any wants met?
- Were all SMART objectives achieved?
- Were all deliverables met?
- Are the stakeholders happy with the results? Are team members happy?

If the project team realizes that an important deliverable has been missed, there are two options.

- Return to the planning phase and create a plan for completing the missed tasks.
- Choose to leave this item as unmet and create a separate project for it.

A FINAL TO-DO LIST

In addition to scope verification and lessons learned, the following tasks should also be completed during closeout:

- Pass on appropriate project information (training documentation, blueprints, troubleshooting information, etc.) to the appropriate people.
- Ensure all payments have been made and paperwork submitted.
- Dispose of or return materials.

All project documents, both electronic and paper, should be completed and compiled. Make sure to include the original document, the final document, and any revised versions.

Key documents include:

- Statement of work
- Project charter
- Project planning worksheet
- Project schedule and related documents
- Risk management plan
- Communication plan
- Change management requests
- Team member evaluations
- Lessons learned
- Meeting minutes
- Status reports

PRACTICAL ILLUSTRATION

Brad met with his team to wrap up the project, discuss lessons learned, and to celebrate successes.

When it came to discussing lessons learned, Brad wondered how his team would respond. *“When we first unveiled what we thought was the finished project with our customer, it seemed like every time we showed them a software bug that had been fixed, two new software bugs appeared. What do you think we learned from this?”*

One of his team members, Melissa said, *“I learned that the next time I see a problem occurring, I’ll try to discuss the reality of the situation earlier with the customer.”*

Brad smiled. *“What a tough lesson to learn. Trust me, Melissa, I learned it too.”*

Brad looked around the room. He felt a sense of belonging with his team. It appeared that it had been a learning moment for all of them.

*This feeling, finally, that
we may change things
– this is at the centre of
everything we are. Lose
that...lose everything.*

SIR DAVID HARE

CLOSING THOUGHTS

- **Yogi Berra:** In theory there is no difference between theory and practice. In practice there is.
- **Dwight Eisenhower:** Plans are nothing; planning is everything.
- **Jonas Salk:** The reward for work well done is the opportunity to do more.



Rick Chisholm made history when he single-handedly changed the professional Audio Visual industry by breaking all the rules and capitalised over 50% market share in Australia with very little capital, no partners, mergers or lenders and set up the first franchise operation of its kind in the world in the late 1990's and early 2000's.

As a 7x founder of companies and 30x businesses such as Innovest, AI Machine, Lightsounds, LSW, Light Emotion with revenue in excess of \$300 million and having employed more than 1,000 staff over the last 35 years. Rick is known as the Start-Up and SME Guru and is Author of a number of books including Business Success for Life. Unlike many mentors, he actually walks the talk and has a number of businesses under management in such areas as Automation, Events management, Importing, Distribution, Retailing and E-commerce.

His BIG passion is Business Education empowering Businesses Owners through knowledge and skills. Whilst Rick has experienced great success, he has also endured many failures. Rick has faced and overcome the exact same challenges you are facing now.



Tala Chisholm is an SME specialist who has owned and managed several small to medium sized businesses in the last 20 years, several of which were eventually sold. She has extensive experience in the fields of retail, franchising, licensing, dealerships, education, importing, distribution and consulting.

Her expertise lies in building and implementing customised cross-platform database and software solutions for businesses, automation, IT, web marketing, advertising, graphic design, business administration, process refinement and implementation. Her business experience ranges from bricks-and-mortar Giftware retailing to highly technical fields such as Security, CCTV, Entertainment Lighting and Audio sales, hire and installations as well as e-commerce.

Throughout her career she also trained and mentored Franchise business owners as well as internal division managers. Some areas of training included retail operations, management practices, business strategy, accounting, cash-flow, marketing, customer service and IT. She has also headed up the drafting of Operating Compliance Manuals for Franchise operations and implementation of all the elements involved.

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