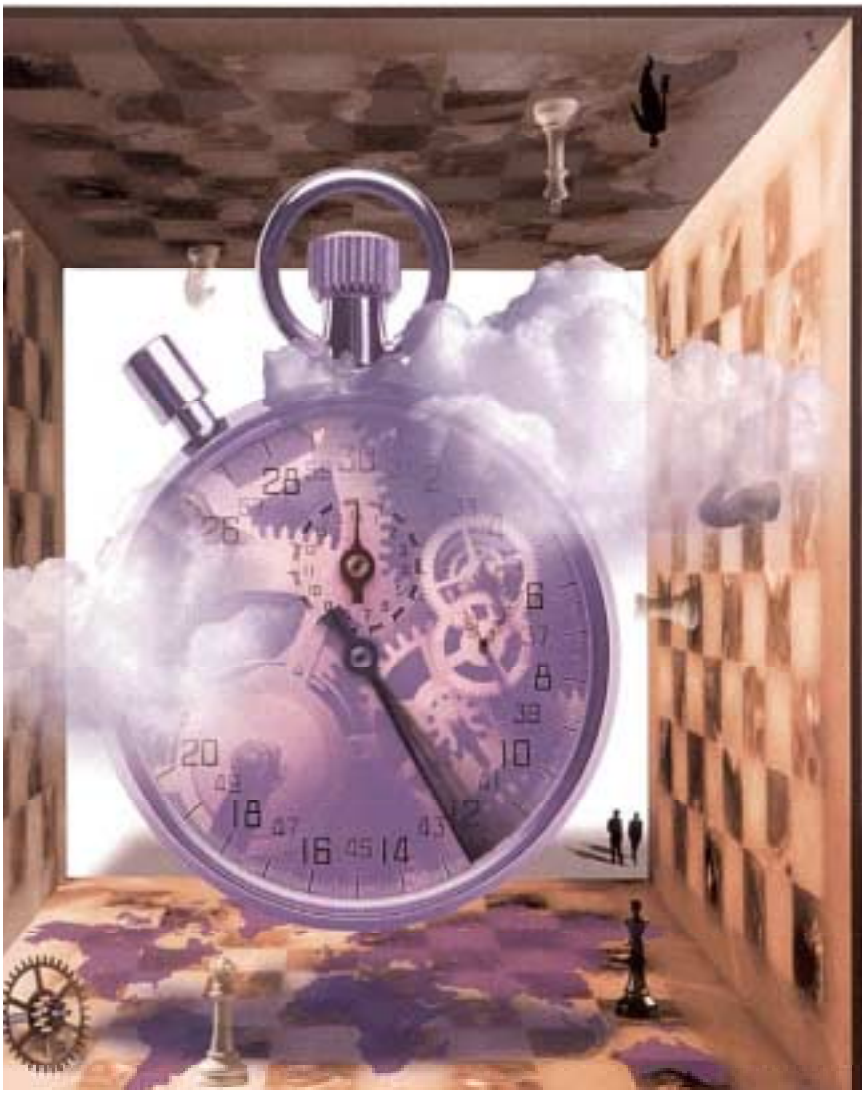
The Busy Person's Project Management Book



Rob and Camille Thomsett

Table of Contents

Chapter 1. So what is so special about projects?

Chapter 2. Getting started

Chapter 3. What else to consider

Chapter 4. Different projects, different paths

Chapter 5. Finalising the plans

Chapter 6. Keeping it together

Chapter 7. Well, how did you go?

Chapter 8. Additional tips for travellers

Appendices

A. Glossary of terms

B. Cool References

C. Project sample forms

Introduction

Camille and I had a bit of a debate about what this should be called. I thought of calling it *The Complete Idiot and Dummie's Guide to Project Management* but, apart from being a bit demeaning, calling this book a Dummies or Idiot's Guide misses the point that project management can only be done by smart, clever and non-dummie people.

This book has been developed for people involved in projects of all types in organisations. Most organisations are undergoing the changes that seem to be coming faster and faster and are looking for projects and project managers to be key change agents. We want to thank Bob Kershaw whose vision and understanding of the importance of business people becoming project managers made this book possible.

As a rule of thumb, the types of projects we are talking about would involve up to five people working up to three months. Projects larger than this would need to use the same principles but there are additional procedures such as formal risk modelling and project documentation that would be required. We cover these in our other book for not so busy people - *Third Wave Project Management.*

The purpose of the guide is to present some common-sense techniques that have been shown to help project teams to plan and deliver successful project outcomes. These techniques should be applied in a participative manner with all team members and key people involved in the process.

Should you have any feedback on the techniques or should you discover other techniques that help you in planning and managing your project please let us know so we can share them with other project teams.

Being involved in projects is one way in which you can be part of redesigning and building an organisation that can meet the challenges of the 90's. Further, being part of a sucessful project is an interesting and enjoyable experience.

We hope that this guide can assist you in achieving successful projects.

Chapter 1

So what is special about projects?

Most of us are used to working in an organisation where what we do is considered "business as usual". For example, Mary has a job calculating statistics for the number of males and females employed in various industry classifications. Using monthly survey forms, she checks each form, enters the details from the form into a computer-based spreadsheet and calculates the basic statistics. Once the data is entered and summarised, Mary then compares this month's figures against previous months' and last year's. Having documented any major variations, Mary prints the summary of industry employment data and then begins work on the next month's survey.

Different jobs, different dynamics

If we call this type of work **process** work, then we can identify a number of aspects of this type of work :

- it repeats over a period of time

  In Mary's case, the work cycle is a month. In other process jobs, it can vary from less than a minute (factory assembly) to many months. However, for the majority of process jobs in most organisations, the cycle is less than a day;

- it is predictable

  Because the work repeats, it is documented as a series of procedures or steps. For most process jobs, the documentation is formal and is the basis for on job training. Even if it is not written down, it is documented in people's "heads" and is taught on the job. Most importantly, by following a predictable and documented set of procedures, we can ensure that a standard process produces a standard output;

- it is easily measured and evaluated

  Most process jobs have clearly defined performance standards and measures. Typically, the person doing the job is informed on the expected performance and quality required and there is a formal measurement and reporting process that is used as the basis of performance evaluation. Because process work has short time-frames, it is measured by outputs;

- it operates within the existing organisation status-quo

  Process jobs are the backbone of the existing organisation. In other words, doing process work does not change the organisation. Rather process work operates within the organisation's current mission, objectives, practices and procedures.

The vast majority of jobs - administrative, manufacturing, management and clerical - are clearly process jobs. Some estimates place the percentage of process jobs at over 90% of all jobs. These jobs are the jobs that we all know and the very structure of our organisations reflect the pervasive nature of process work. Indeed, many organisations are structured around the various process work categories i.e. Mary works in the Industry Statistics Section. Her friend Bill works in the Industry Statistics Publishing Section. Different jobs - different sections - same data.

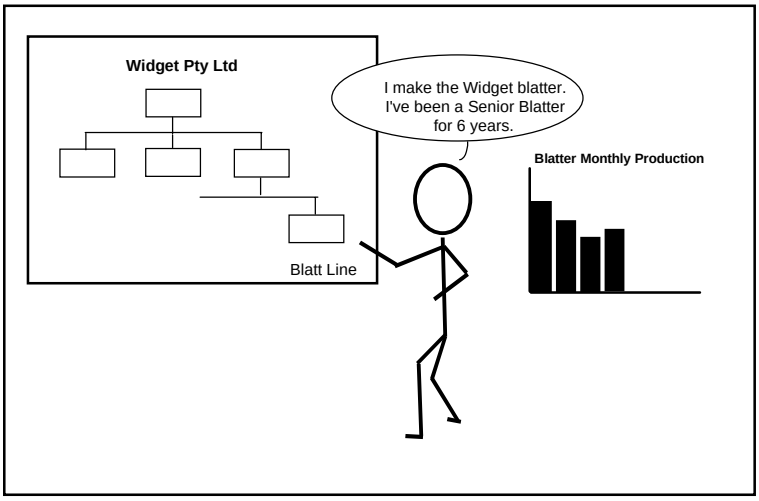


Fig. 1 - Process work

So what is special about projects?

From time to time, all of us will be involved in a very different type of work. This work is the exact *opposite* of process work. Mary is asked to work with a small team of computer people to revise the system that processes her statistics. Together with the computer people, Mary documents what is required to develop a new system that provides more information and can produce the results on a weekly instead of the monthly cycle. As the system is being developed, new ideas emerge and the team changes what they are doing to include the new concepts. After a couple of months, the new system is ready and Mary trains a new person in the system. Mary changes jobs and becomes a business analyst.

If we call this type of work **project** work, then we can also identify a number of aspects of this type of work :

- it does not repeat

  Undertaking a project involves the team defining the tasks that need to be undertaken. Although some tasks may repeat in other projects, most projects involve unique tasks. While most projects follow a similar "life cycle", the specific tasks reflect the project's objectives and outcomes;

- it is dynamic and non-routine

  Because the work is unique it is rarely documented as a set of standard procedures. While process work repeats as a series of routine activities, project work is dynamic and can change during the project. Many small projects have been successfully undertaken with no formal documentation. In projects, you can have a standard process such as risk assessment, but the outputs of the process i.e. an assessment of the risks of the project require unique and non-standard management;

- it is not easily measured and evaluated

  Given the dynamic nature of project work, it is fairly hard to measure how the project is proceeding and to set standards for performance. Also, whereas in process work, performance is measured by outputs that are produced on a regular basis over short periods of time, projects take

longer, often produce vary intangible outputs and success cannot be measured, in some cases, for many months. Many of the project management practices in this book are designed to provide a basis for measuring progress and success;

- it changes the existing organisation status-quo

This is the key to the difference between process and project work. Projects change organisations and as a result require special attention from all involved people. To put it simply, projects produce changes to existing process jobs and create new process jobs. Projects are the key vehicle via which organisations change what and how they do things.

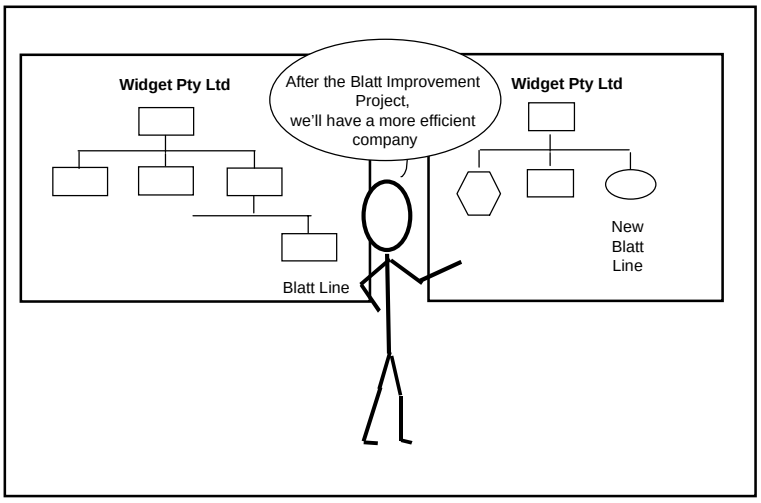


Fig. 2 - Project work

Many people who have moved from process work to project work have experienced confusion and anxiety as they have moved from a work environment where everything was organised and standardised to a dynamic and flexible environment where the first thing to be done is to define what the work is required! This handbook is about helping you to make the change from process to project work.

Different jobs, different skills

Most of the support services in organisations are oriented towards process

jobs. Many of us have been on technical, supervision, leadership and management training sessions that are oriented towards process work. In fact, the vast majority of training that we have received is either devoted to how to do process work or how to manage those people doing process work. So it is not surprising that moving from process work where we've been extensively trained (formally and on-the-job) to project work where there is little education or procedures can be very frustrating.

All process work requires some technical knowledge. Even the simplest of jobs has some technical component. The filing of documents requires a technical knowledge of the filing system, the structure of File Numbers and the completion of file tracking records. The processing of an application for a new insurance policy requires technical knowledge of the correct completion of the application, the information required and the applicable business rules and procedures to validate and correct the application. Most organisations provide technical education for people undertaking process jobs.

As we move into supervisory and managerial jobs, we are required to learn new skills and concepts. Standard supervisory tasks such as counselling people, completing performance appraisals and providing direction to the team require us to learn administrative and managerial knowledge. So most people are involved in at least two types of work - technical and administrative and during a normal day, we switch between these two types of work quite easily. We have learnt to balance technical and administrative or managerial tasks.

When you become involved in project work, you will need to learn some new skills. These skills are called project management skills. While they share some tasks in common with technical and managerial skills - negotiation, written and oral communication, task scheduling and problem-solving - many of these skills are unique to project management.

While industries such as construction and engineering have always recognised the need for formal project management skills, many service sector organisations are just beginning to understand that there is a need for project management. As you will see in the remainder of this handbook, the skills of project management reflect the dynamic and complex nature of project development.

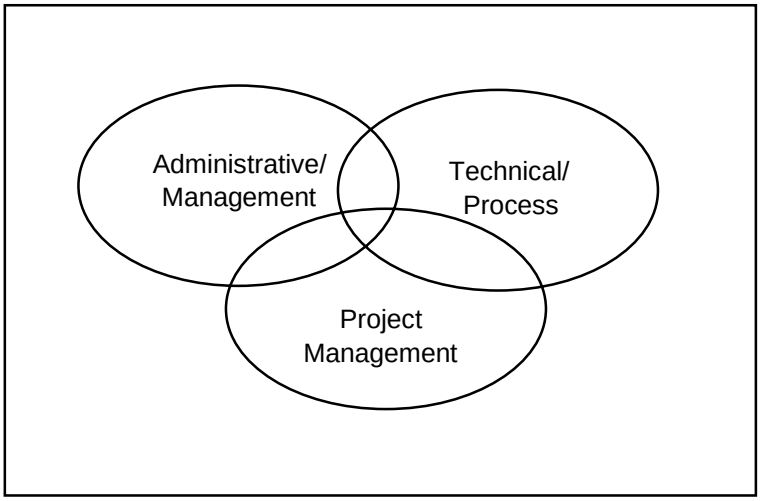


Fig. 3 - Different jobs, different skills

To summarise, projects are different to the majority of jobs that we have trained for and that our managers are used to managing - we need to acquire skills that will help us complete projects. We also need to become more flexible and creative in our behaviour as projects require flexibility and creativity.

The remainder of this book introduces these skills and provides some hints as to how to apply them on your project.

So, let's get started.

Chapter 2 : Getting Started

You can think of a project as a journey. Like all journeys, if you want to arrive safely it is sensible to do some planning before you start. The more detailed the planning, the more likely that you will not end up where you don't want to be. It is very important in projects to take some time to do some up-front planning as it is likely that you'll be under pressure to get under way, into the project and to finish it as soon as possible.

The first step in planning your project is consider three related factors that are common to all projects:

- who is involved in the project ?
- what is the project's scope or boundaries ? and
- what are the objectives for the project ?

We'll look at these one at a time and then see how they are related.

Who is involved in the project ?

Every project will involve more than one person. In a typical small project, you will probably be able to indentify the following people:

- the project manager/project leader

This person is the leader of the team and is generally held accountable for the outputs of the project. While this may sound a little "tough", the project manager would involve his or her team in all aspects of planning the project and should expect assistance from the project sponsor in managing the project;

- the project team members

These people are the people directly involved in undertaking the project's tasks. They are the key to the project's success as their creativity and hard work will be the major input to the project;

- the project sponsor

This person will normally be a manager or executive who is organisationally responsible for the project's resourcing, costs and success. The sponsor is another key factor to the project's success as he or she will be expected to support the project manager and team in areas beyond the team's control and authority;

- the project clients

These people would be the people who are affected by the changes that the project is implementing for the organisation. For some projects, the clients may be the team members but typically there are a number of people who will have changes to their jobs and working relationships who will not be in the team. It is essential that they are involved in the project;

- support groups

These groups would be required to provide specialist support to the project team. Given that projects change organisations, typical support groups would be Human Resources, Finance, Accomodation, Marketing and computer and other specialists;

- other project teams

In a time of organisation change, there will be many other projects underway. Some of these projects may have an impact on your project. Where there is a clear relationship between your project and other's, the project managers of the related projects should be kept aware of and, in some cases, directly involved in your project.

These people are often called *stakeholders* or involved groups. They have a "stake" in the success of your project.

It will be normal for these stakeholders to have different views and concerns regarding your project. However, if you involve these people in a positive way and early enough in your project, you should be able to achieve consensus. If

you can't, then it is reasonable to expect that your project sponsor can assist you in resolving any conflict.

The best way to keep your stakeholders on side is to invite them to participate in your project planning sessions as discussed in later chapters. By using your stakeholders to help you formulate your project's scope, objectives and other planning issues, you can easily identify where there is agreement and where there is conflict.

The use of team-oriented project planning, development and management has been shown to increase the commitment of team members, to avoid missing key tasks and other factors that are known to your stakeholders and, most importantly, to be more fun. In the dynamic and relatively unstructured project environment, the more minds... the better.

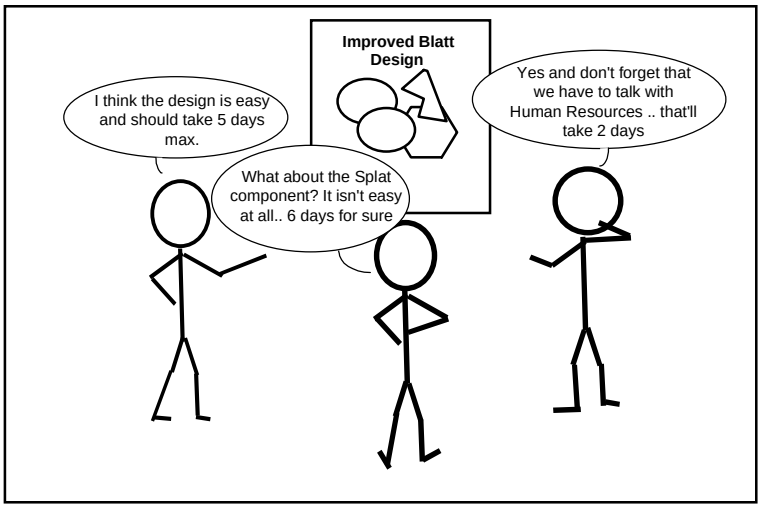


Fig. 4 - Different stakeholders, different views

What is the project's scope?

In many sports, there is a clear boundary. Golfers can hit the ball out-of-bounds, net-ball players have clearly defined court boundaries and the boundary has frustrated many football players.

The boundary of a project is called the scope of the project. If you can't define the scope of your project then you haven't defined your project. One way to think about scope is to consider where you and your team's responsibilities

begin and end.

In process work, the boundaries of the job have been carefully defined over many years and are generally detailed in the various job descriptions. For example Mary [in her previous job] knows that it is her responsibility to enter the industry statistics and to produce the summaries. Her friend Bill has the responsibility for taking Mary's summaries and publishing them. Each job has clearly defined boundaries.

At the beginning of projects, the boundaries are generally not so clear or documented.

Sometimes, it helps to think of project scope as a circle or a series of flags in the ground. Inside the circle is your project and the activities that you and your team have to undertake. Outside the circle are your stakeholders and the activities that they have to undertake.

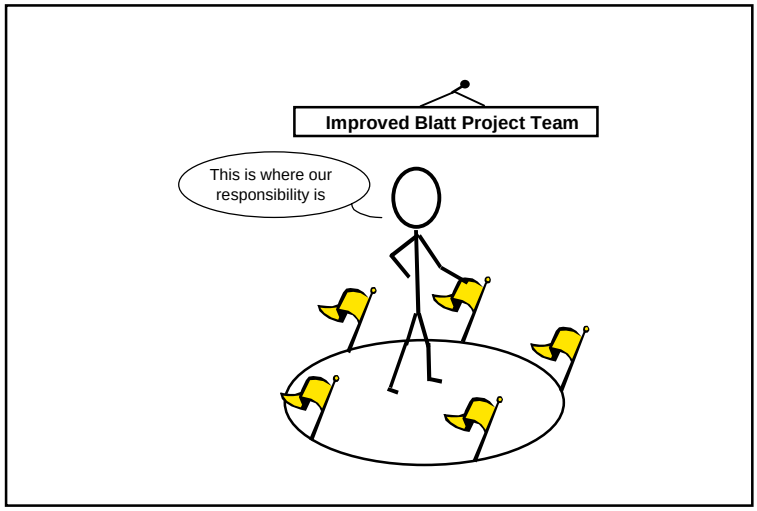


Fig. 5 - Project scope

Another way of thinking about scope is to specify what you are responsible for achieving and what you are not responsible for achieving. Some of you will recognise this as part of the Kepner-Tregoe [1981] approach to problem-solving and decision making. While it may sound a bit strange, it is often easier to define what you aren't doing in the project and, as a result, clarify what you must be doing. The example in Figure 6 should give you an idea as to how this technique works.

At early stages of your project, you may not be able to determine clearly what is "in" and what is "out". Again, it is very important to work with your project sponsor and stakeholders to resolve any queries or assumptions regarding scope.

PROJECT : *Industry Processing Statistics*	
IS	IS NOT [Could be]
To reduce processing time for raw data from 10 days to 5 days *To produce Industry profiles with sub-industry categories*	*To provide job design*
NOT RESOLVED	

Fig. 6 - Scope and objectives [Kepner & Tregoe]

What are the objectives of the project?

If scope is where your responsibilities lie, then objectives are what you have to achieve within those responsibilities. Most of us have had some training in the importance of objectives and, in terms of your project, having clear objectives is paramount.

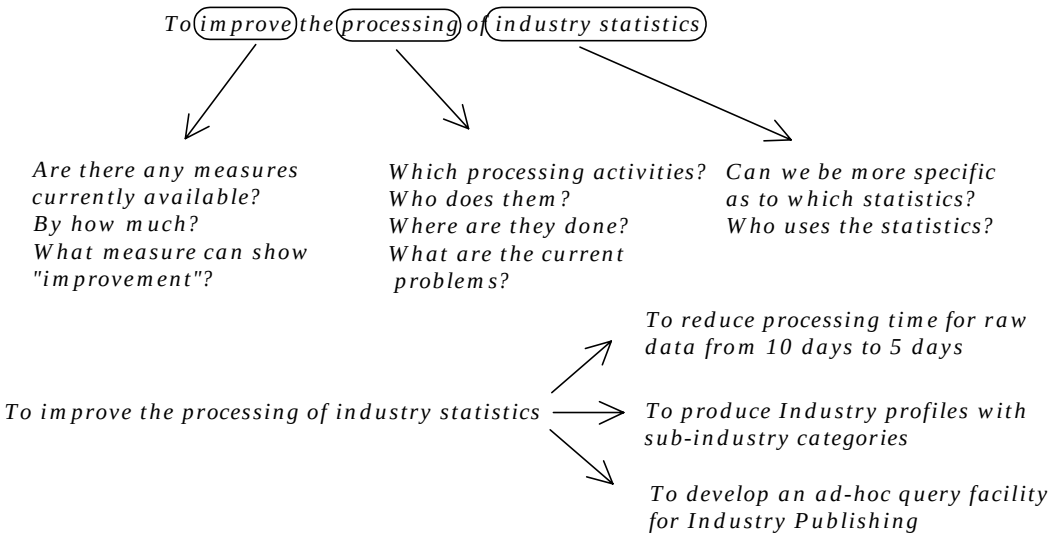
If you don't know the scope and objectives of your project - you don't know anything!

It is typical of projects, especially innovative ones, that the objectives may be fairly broad and high-level at the beginning. For example, in Mary's project the initial objective may be:

To improve the processing of industry statistics

However, the more broad the objectives are, the more likely that the team and the project stakeholders may interpret them differently. So it is important to "fine-tune" the objectives as quickly as possible. Objectives should be as specific and measurable as possible.

One tried and true technique for helping to develop measurable objectives is to "parse" the objective word by word to see if you can state the word in a more accurate and precise manner.



This technique should ensure that you have thought through your objectives before you start.

A common mistake when stating objectives is to state the "results" as objectives. For example "To reduce costs" or "To improve service" are not objectives but results or outcomes from doing something. Objectives should state what you have to do to achieve the outcome of " improved service", for example. Another mistake is to state constraints as objectives. For example, "To implement a new team-based processing cycle by July 1" or "To deliver the project using only three people" are statements of constraints. It's not that you can ignore any constraints such as timing, costs or resources that apply to your project, you should list them as constraints.

How are these things related?

Scope, objectives and stakeholders are inter-related. If you change the scope of your project, then you will change your objectives and the involved groups or stakeholders. If your project's scope expands, then you will have additional objectives and some previous stakeholders will become part of the team and there will be new stakeholders.

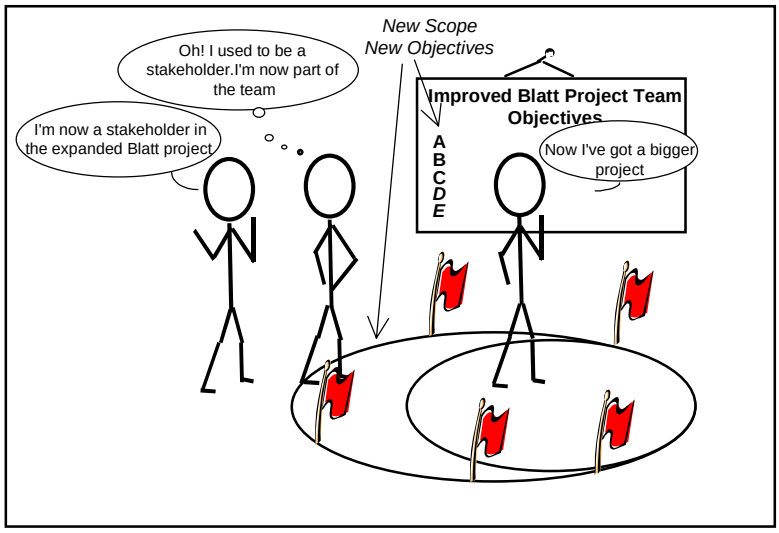


Fig. 7 - New scope then new objectives and new stakeholders

Change is inevitable in most projects. What is important is that as long as you have a clear and documented set of objectives and scope, then you can determine the impact of the change and re-plan your project. The key point here is to "not panic". As long as you can manage the changes to your project's scope and objectives, you'll be able to manage the project. Every time the project changes you must stop to re-plan with your team and project stakeholders.

As we'll discuss in later chapters, there are other parts of the project that will change with changes in scope and objectives.

Chapter 3 : What else to consider

As with all journeys, there is more to consider when you're planning than the objectives, scope and who else needs to be involved. You have to plan your finances, the itinerary, stop-overs and insurances, for example.

In projects, there are similar factors that you and the team have to consider before you begin the project in earnest. In this chapter we will concentrate on two factors - risk and project strategy - and in the next chapter, we'll examine tasks, estimates and schedules.

Risk assessment

The concept of risk should be familiar to all of us. When you are planing an interstate business trip, you check out if there is the likelihood of a refueller's strike; whether fog or rain could delay the planes; whether there is enough time from when the plane lands to your making your appointment and so on. In other words, you undertake a risk assessment. Risk assessment is the identification of factors which can affect the probability of success for your project. The more likely the possibility of rain or a strike, the higher the risk of the journey and the lower the probability of you making the meeting on time.

While the process of risk assessment in our everyday activities is generally done "in our heads", in project work, it is important to examine the risks in a open and documented manner.

In projects, there are three distinct areas or categories of risk:

- product risk

This category of risk deals with the product or service that the team is developing in the project. Some products are simple and therefore low risk while others are complex and of higher risk. For example, Mary and the team who are developing a new computer system and revised statistics processing cycle are working on a product (the new statistics system) that is not complex, is based on existing procedures and does not require processing a lot of data. Therefore, the team perceives the product to be relatively low risk.

The product risk can be assessed by considering factors such as :

- how innovative is the product?
- are the requirements well understood and stable?
- the complexity of processing or procedures involved in the product? and
- are there high expectations for product performance or quality?

- team risk

Different teams have different skills and experience and it is important that you honestly look at the team and its members to determine whether there are some risks associated with the team and the team process. For example, Mary and the team have not worked together before, there are a couple of inexperienced computer people on the team and the project has very tight deadlines. In this case, the team assesses themselves as a high risk team.

The team risks can be evaluated by considering factors which include:

- how experienced are the team members?
- are they full-time on the project?
- do they have management support? and
- do they have a common working area?

Don't worry about declaring your team to be a high risk team. It doesn't mean that you are incompetent or "out of control", it simply means that you are undertaking a new and demanding project.

- target area risk

As we discussed in the earlier chapters, projects change the way people work and the people and areas who are affected by the project (some of the stakeholders) can be considered as the "target" area. In Mary's project, the changes are primarily directed to Mary and the people she works with in the Industry Statistics Section and to Bill and his publishing group. They are all positive about the new system and are prepared to work with Mary's team.

Mary and her team assess the target risk category as low.

Target area risks can be evaluated by considering such factors as:

- are the people impacted by the project supportive?
- are there a number of different stakeholders?
- are the stakeholders involved full-time or in an ad-hoc fashion? and
- is the project going to significantly alter existing work flows?

Again, it is important to be honest about your evaluation of this risk category. Having a high risk target area does nor imply that they are a rabble or that they are going to sabotage your project. It means that there is a need to carefully support the people and to work with them to ensure that the project succeeds.

Once you have evaluated and agreed on the risk factors and their score (Low, Medium or High), you can then come to an assessment of the overall risk of your project. In the case of Mary's project, the product was Low risk, the team was High risk and the target area was assessed as Low risk. Overall, Mary's project was considered as Medium risk because the team is an important factor in any project but the High team risk was offset by the Low risk in the other two categories.

A sample risk assessment questionnaire is included in Appendix C and you can use it as a basis for formalising the risk assessment for your project.

- *The risk assessment process*

As with all activities in planning and managing your project, the risk assessment process should be undertaken with your team members and, if possible, the stakeholders for your project. This is very important as different team members will have different views on the risks of your project.

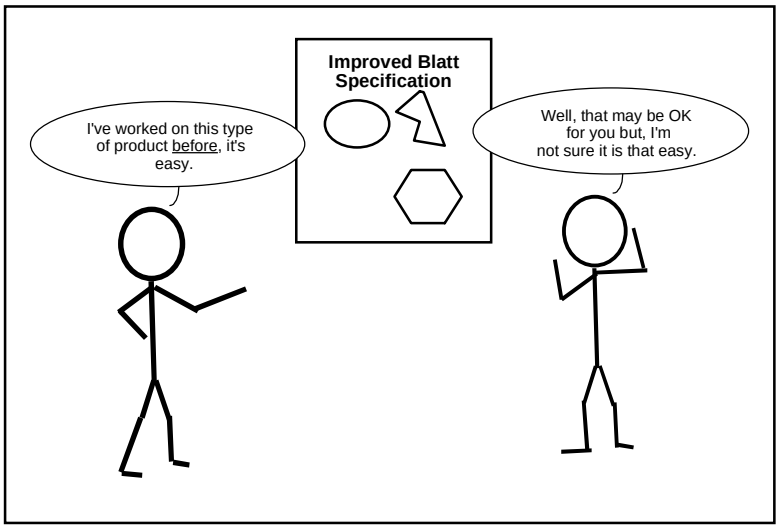


Fig. 8 - Different people see different risks

What is really important is that the risk assessment is undertaken in a democratic fashion. The best way for you and your team to undertake a risk assessment is to copy the form in Appendix B for each member of the team and, if possible, any key stakeholders. Each person answers the questions on the risk assessment form and then in a team session, you discuss the answers and see if you can reach agreement on the risk factors.

Given that risk is generally subjective and personal, you will find that after the discussion, there may be still some risk factors upon which you cannot agree. In this case, you vote and the majority wins.

If you have a tied vote, then the worst case wins. For example, two team members see the project as Low risk and two see it as Medium, then the project would be treated as Medium risk.

It is also very important to note all high risk factors and to discuss with your team, stakeholders and project sponsor any actions that you and the team can implement before the project starts to reduce and manage the high risks. The capability of pro-active reduction of risk before the project starts is a very powerful aspect of formal risk assessment.

In Mary's project, because the computer people are inexperienced and the

project has tight deadlines, some possible actions that she, in conjunction with her project sponsor, could implement to reduce the risk of the project are to negotiate a smaller scope and objectives for the project by producing a system that only processes certain key statistics, to get some training for the computer people and to see if there is a computer expert that the team can use as a consultant.

As we'll discover in the next chapter, the risk of a project has an effect on the estimates as well as on the probability of success. Further, the risk of a project influences the choice of the project strategy.

Project strategy

When planning a journey, you face a choice as to how you organise your overall approach to the trip. For an overseas trip you may decide to visit as many countries as possible spend a couple of days in each place. Alternately, you may buy an open ticket which enables you to spend as little or as long as you wish in any country. You may decide to quickly visit one area to check it out and then plan to return to that area for a longer stay later in your journey. Another option is to take an organised tour that spens only three days in each area.

In projects, the overall approach is called the project strategy. Put simply, the project strategy is about whether the project is done as one whole unit or broken into sub-projects. There are four basic strategies which can be used for small administrative and computing projects. These strategies have been developed in other industry areas such as construction and manufacturing which have extensive project management experience.

Let's assume that in Mary's new project, the basic activities that will be required are Analyse Requirements (interview people, examine existing procedures, to determine the requirements for new software), Design Solution (examine alternative mechanisms, procedures, forms design, etc to select an appropriate processing design), Build Solution (develop new procedures, systems, training programmes, etc) and Implement Solution (install new procedures, train people and convert existing forms, etc).

- monolithic strategy

This strategy involves undertaking each development activity in sequence developing the product or service as a whole. Each activity is completed and reviewed before the next activity starts. While each activity such as Analyse Requirements may be broken into smaller tasks (see Work Breakdown in the next chapter), all activities associated with Analyse Requirements are completed before any of the Design tasks are commenced.

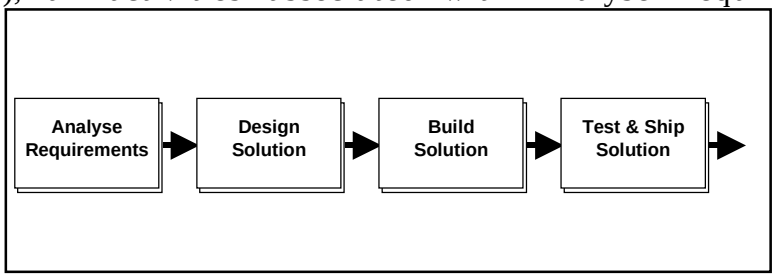


Fig 9. - Monolithic Strategy

This strategy is suitable for Low risk projects where the requirements are stable and the project environment is not likely to change during the project.

- sequential release strategy

In some projects, it may be more advisable for you to partition the project into smaller sub-projects and to implement the new product or service that you are developing as a series of small increments or releases. In this case, you have the choice of two strategies - sequential or concurrent release. The sequential release involves breaking the project's requirements into segments and developing one segment first using the monolithic strategy as shown in Figure 10. Once the first segment is implemented, the team moves to the next segment or release.

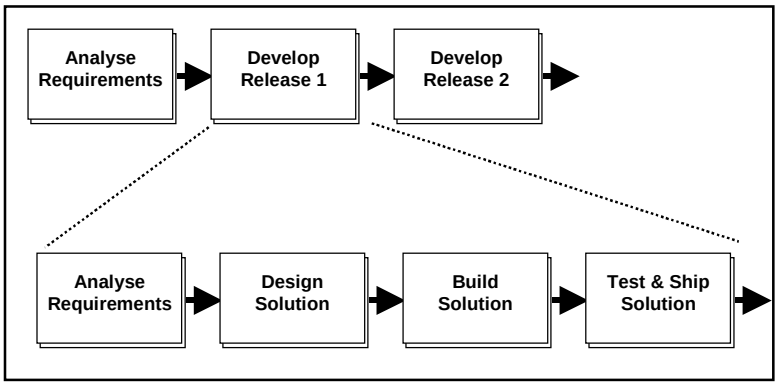


Fig.11 - Sequential Release Strategy

In our example project, Mary could develop new procedures only for a sub-set of the processing (for capturing the basic data, for example), implement those procedures and then begin another project (release) on the more complex statistics analysis. Alternately, she could develop all procedures for all statistics processing but Release 1 only handles certain key industries with Release 2 adding the other industries.

This strategy is suitable for most projects where you can negotiate the delivery of partial products or services and there are some deadline constraints.

- concurrent release strategy

Concurrent release is an alternative to sequential release where the various sub-projects and product components are developed concurrently as independently as possible. As shown in Figure 12, you can schedule as many sub-projects or releases as you can staff the project. There are some additional project management costs in this strategy as each release has its own scope, objectives, risks and so on.

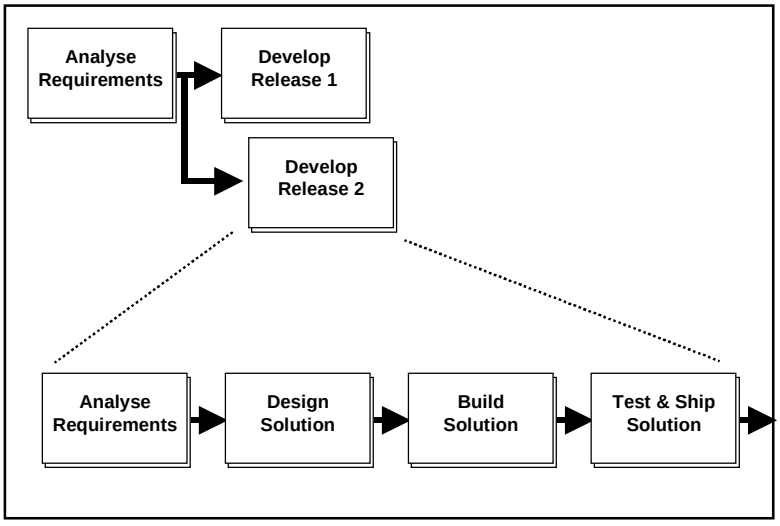


Fig. 12 - Concurrent Release Strategy

This strategy is suitable for all types of projects where you can break the project up into releases and you have the people to staff each release.

- fast-track or evolutionary strategy

This strategy is the most controversial of the project strategies as it involves developing a version of the product, procedures or services as quickly as possible then after reviewing the first version while it is being used it is enhanced and improved through another fast-track project/release. It is inherent in the strategy that the quality of the early releases of the product will be lower than in the other strategies and that refining and improving the product's quality while it is being used is more expensive.

However, for high risk projects such as innovative products or products with dynamic requirements, this strategy is quite successful. The proviso here is that all stakeholders and the project sponsor must be comfortable with the use of this strategy and it's quality problems in the short term. The other danger with using the fast-track strategy is that it becomes an excuse for lack of planning and rushed delivery. You still plan and control a fast-tracked project - you only cut corners that make sense.

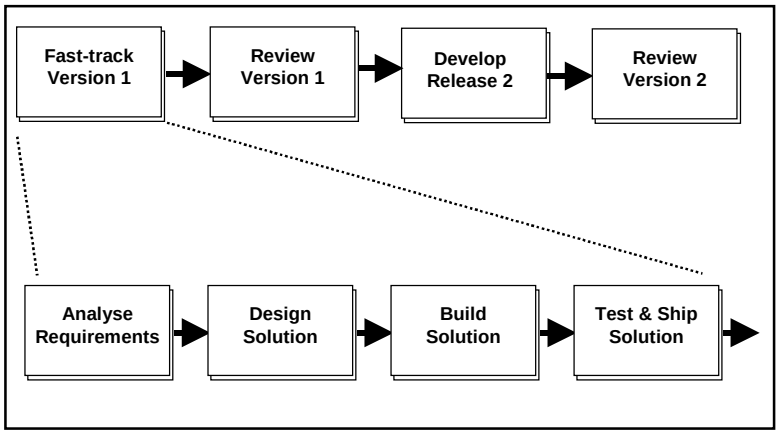


Fig 13 - Fast-track or Evolutionary Strategy

You should treat the choice of the project strategy as one of the most important decisions taken during project planning. As we'll explore in Chapter 7, the changing of project strategy, from monolithic to sequential release, for example, is a powerful technique for dealing with project changes.

Chapter 4 : Different projects, different paths

Having determined your scope, objectives, stakeholders, risk and potential strategies, you and the team can begin to determine the specific tasks and estimates for your project.

Again, when planning a journey, we are faced with similar activities. For our business trip, we have to decide what tasks, time and sequencing are involved in getting packed, organising the kids, getting care for the pets, packing and so on.

In our day-to-day projects, we tend to do these activities informally and often by rote. When planning projects, the processes of task identification and estimation are too important to be done quickly and informally. As with the other activities required for developing our plans, the task listing, estimation and scheduling should be done in a open team session. If there are tasks which require stakeholder involvement, they should also be involved in these key processes.

Task identification or work breakdown

It is surprising that task listing is probably the easiest part of project planning yet one of the most important. One of the most common reasons why projects take longer than expected is the simple fact that the team forgot an important task while planning their project. When you're working on a 6 week project and discover that you have to add another 6 week task - you're 100% behind schedule immediately.

Task identification involves an approach that is formally known as project development life-cycle or work breakdown structure or, for technical projects, a methodology. However, despite these impressive terms, it simply involves a series of loops involving the brainstorming of tasks and then breaking up the tasks into smaller sub-sets as shown in Figure 14. You should allow the brainstorming process to be as creative and as free-flowing as possible. It is very important to not confuse the task identification with the process of scheduling the tasks. Just let the team identify the tasks in any order and then worry about the sequence of undertaking the tasks in a separate session - see scheduling later in Chapter 5.

As we get more experience in project work, you will begin to notice that some projects tend to involve similar tasks. As a result, you can begin to develop basic templates of tasks or work breakdown structures for specific project types. A basic project development life-cycle is included in Appendix C. This can provide a basic framework for developing your own project task list.

While you and your team are identifying the tasks, the following tips should help you in the process:

- 5/10day rule

It is a good idea to keep breaking up the tasks into smaller tasks until you arrive at tasks that would take between 5 to 10 days to complete. This makes it easier to keep track of how you're going during the project;

- has anyone been here before?

See if you can find anyone who has experience in the type of project you're planning or who has been involved in doing similar tasks in other projects. This is common sense but it is surprising that the "not invented here" syndrome exists in projects as well as in other activities;

- what is the output from the task?

For each task you list check out that everyone in the planning session understands the outputs that will be produced when the task is complete. For example, a visit to other user sites of the training vendors will result in a Site Visit Report.

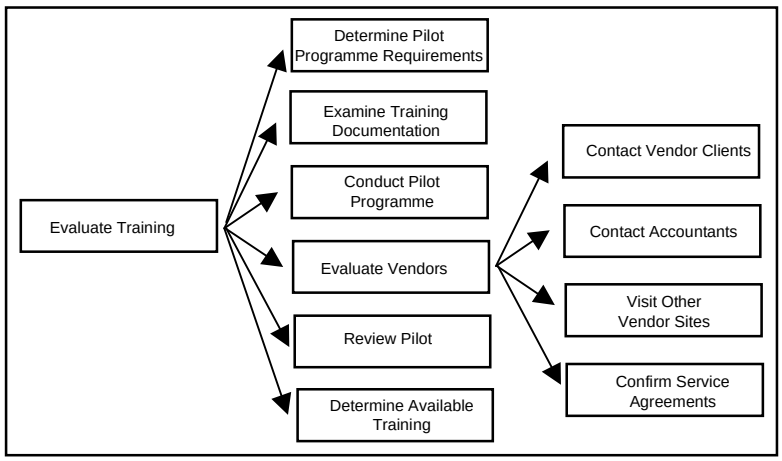


Fig. 13 - A work breakdown structure

Probably the most important tip is that a team will always produce a more comprehensive work breakdown than an individual. By using your team members and stakeholders to help you identify tasks, you will get a more accurate list and a better understanding by all team members of what is required from them in the project.

Task estimation

Having got your task list, the next step in planning your project is to estimate the tasks. Before we look at a couple of techniques that can help you derive more accurate estimates for the tasks, we must get some ground-rules clear:

- look at different scenarios

In our day-to-day activities we have been taught to estimate using a single estimate. For example, most of us will say to friends whom we are meeting for dinner " I'll meet you at the restaurant at 8.00 pm". In estimating projects, it is better to consider three scenarios : Best case which assumes everything is perfect; Likely which allows for some things not going well and; Worst case where everything goes badly. In our restaurant example, the Best case is when the babysitter is on time, the kids do not want you to help them with their homework and the car has enough petrol. As a result, you get to

the restaurant at 7.50 pm. The Worst case is that the babysitter is 20 minutes late, the kids want you to watch the end of Neighbours and the car is out of petrol, etc. You arrive at the restaurant at 9.15 pm and your friends have left. As you can probably see, the same things can happen in projects and your project sponsor, team and stakeholders should all be made aware of the Best, Likely and Worst case situations and estimates. This approach is called Sensitivity Analysis;

- risk has an impact on estimates

Our risk assessment, which you must complete before you estimate the tasks, will have a significant impact on the size and accuracy of your estimates. Simply, the higher the risk the bigger the estimate and the higher the probability that your estimates will be wrong. Let's assume that Mary is planning a visit to various companies that use an education vendor that she wishes to review. She has three sites to visit. In a low risk project scenario, the three sites are within walking distance of her company, the training people in the sites are prepared to co-operate and Mary is allocated full-time to the project. In a high risk project scenario, the three sites are in different cities, the training people in the sites are busy and are giving Mary's visit a low profile and she are part-time on the project. Clearly, in the high risk scenario, she will take much longer to achieve the review;

- a team estimate is always better than an individual estimate

Each one of us has skills that we have mastered and as a result we have a good understanding of how long it will take us to undertake tasks involving those skills. In project work, you will often be required to estimate how long a task will take and that task is one where you do not have experience or skills. In this case, an open discussion with the team about the task estimate (as we'll discuss later) will enable you to get a better grip on what the task involves and how long it should take. In many cases, it is not the estimate of the task that is wrong but the understanding of what the task involves. Further, because we are all so different in skills and capability, a group discussion of estimates will provide different views, assumptions and a more detailed understanding of the complexity and risks of the task resulting in a more accurate estimate.

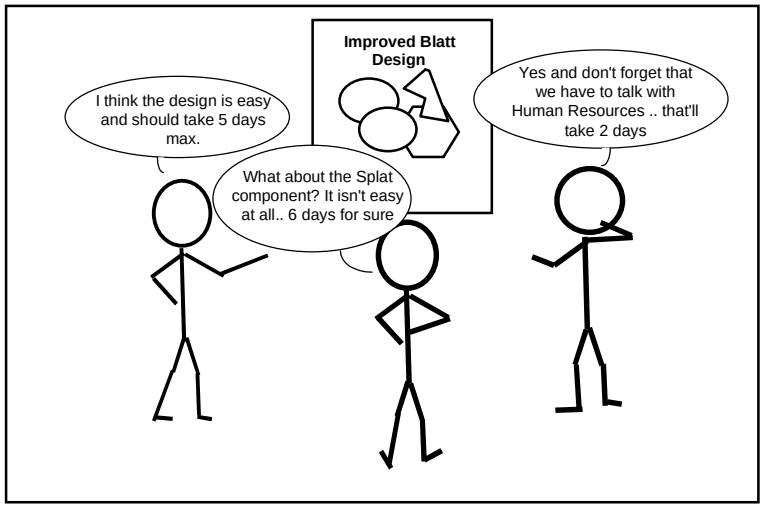


Fig. 14 - Let's talk about it

- separate effort from duration

This guideline may appear a little strange to some of us. However, in projects we are really working in two times. The first is the actual time (effort) required to complete the tasks and the second is the duration (elapsed effort) required to allocate the effort. For example, Mary requires 6 hours to review the specifications of her project but because of other tasks she can only allocate 2 hours a day so the elapsed time is 3 days for the 6 hour task. You should estimate in effort first then as discussed in the next chapter, adjust the effort estimates to duration during the scheduling of the tasks.

Delphi estimation

A very good approach for estimation of both effort and duration is based on the Delphi technique developed by Herman Kahn of the Hudson Institute for use in predicting long-term social and economic trends. It is a team-based technique and is easily applied for all types of projects.

It involves 9 simple steps:

- Step 1 - provide team members and stakeholders with the relevant

information regarding the project, ie. the scope, objectives and stakeholders as described in Chapter 2;

- Step 2 - conduct a formal risk assessment and select the project development strategy as described in Chapter 3 to ensure that all team members have discussed their assumptions and views;

- Step 3 - brainstorm the task lists as described earlier in this chapter;

- Step 4 - each person individually estimates each task using Sensitivity Analysis to provide a Best case, Likely and Worst case estimate for each task. The Best case assumes everything goes as well as it can, the Likely assumes that some problems will occur and the Worst assumes that many things will go wrong and our assumptions are incorrect;

- Step 5 - all estimates are written on to a whyte-board and grouped in the three ranges;

- Step 6 - each person discusses the various assumptions and issues they considered when developing their estimates;

- Step 7 - where required, the various estimates are adjusted based on the team discussion;

- Step 8 - each range is averaged with out-riders (those estimates that are not adjusted through the team discussion and are outside the ranges evidenced in the estimates) are discarded;

- Step 9 - the resultant ranges are used as the basis for scheduling as discussed in the next chapter.

The Delphi process results in a highly-discussed and ranged set of estimates as shown in Figure 15.

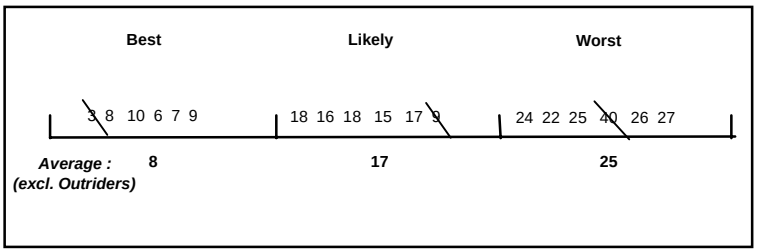


Fig. 15 - Wide-band Delphi estimates

Now that you have three estimates for each task, there are two easy ways for determining which of the three estimates you and your team will use for developing the project schedule. The first is to select the range reflecting the risk of your project. That is, for a Low risk project you will use the Best case estimates; Medium risk uses the Likely and; High risk you will use the Worst case. A better variation is for you and the team to complete a quick and informal risk assessment of each task and to use the ranges as above for each task. For example, in Mary's project, she and the team see the analysing of the current system as Low risk and use the Best case estimate for that task. However, the programming is seen as High risk and the team uses the Worst case estimate for that task.

Don't worry if you spend a fair bit of time in developing your task lists and estimates during the project planning process. The task listing and estimation process is vital in developing the costs for the project and for providing the basic data for developing the final project planning outcome - the project schedule. It is obvious that the more rigorous the estimation and task listing the more realistic would be the schedule and other project information.

Given that many projects are about significant changes to the way we do things, it is probable that our estimates will be wrong because of the “newness' of the tasks we have to undertake. What is important here is not to hide the fact that you have made estimation errors but rather to immediately see your project sponsor and discuss what needs to be done to re-plan the project. We'll discuss this in more detail in Chapter 7.

A very brief note on project costing

The team estimates can be used as the basis for developing the project costs. In most small projects, the biggest cost component will be people and their time. However, in some projects, there will also be some costs required to purchase new equipment such as computers, furniture, printing and training equipment, for example.

Your organisation's Finance people in your area can give you assistance in developing the various costs involved in your project

Chapter 5 : Finalising the plans

The final process in developing your project plan is to develop the project schedule - the sequencing of the tasks and the allocation of team members and stakeholders to those tasks.

In planning our journey we often tend to plan the schedule for our journey before we've sorted out the estimates, costs, availability of flights and risks. As a result, once we've contacted the airlines, we have to re-plan our entire journey because of costs and schedules.

In planning projects, the scheduling of tasks is the last process of planning. However, as we'll cover later in this Chapter, once we have developed our schedule, we may need to re-schedule certain tasks or people to shorten the schedule or to more efficiently allocate team members across the tasks.

In developing the project schedule, there are three basic steps. The first is to develop the network or relationships between the tasks; the second step is to allocate the people and adjust the estimates for duration (remember that we made our estimates in effort in the previous chapter) and the final process is to adjust the schedule for efficient allocation of resources.

However, before we get into developing the schedule, we need to look at some basic concepts behind the scheduling process.

Task dependencies and relationships

The key to scheduling is to determine which tasks require something from other tasks before they can start. That is, you must identify the dependencies bewteen your tasks. For example, in planning our journey, until you've booked your flights you cannot confirm your hotel bookings.

There are two major types of dependency. The first is one task requires the output from another - a delivery or output dependency. In Mary's project, she needs to evaluate the various education vendors and produce a Vendor

Report before she and the team can commence the pilot education programme. Alternatively, a task may require a person to finish a task so that they start another task - a resource dependency. Once, Mary has finished producing the Vendor Report, she can begin designing the training programme.

There are different types of relationships between tasks as well. The most common relationship is called a finish-to-start relationship. In this relationship between tasks, one task must finish before the dependent task can start. This relationship is often associated with output dependencies. However, sometimes it is possible to overlap tasks. For example, once Mary has started analysing her current procedures, she can also begin to document the problems of the current statistics processing. This relationship is called a start-to-start. With start-to-task relationships you must identify how long after the first task has started the second task can start. That is, if a task can start two days after another task, this will be indicated on the relationship diagram.

Figure 16 shows these dependencies and relationships.

You can also have finish-to-finish and start-to-finish relationships but these are less common in small projects.

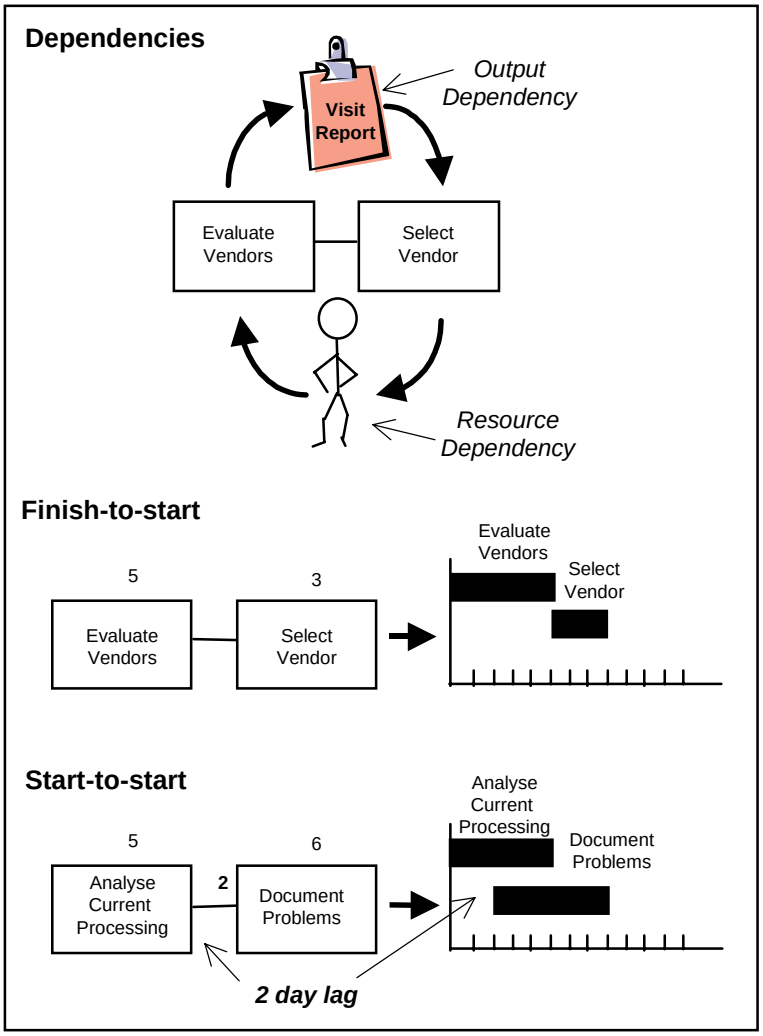


Fig. 16 - Task dependencies and relationships

Developing the task network

The first step in developing the project schedule is to develop a task network diagram. These diagrams are also known as a PERT/CPM (Program Evaluation and Review Technique/Critical Path Method) diagrams. In these diagrams the tasks are shown in boxes and relationships (which are generally assumed to be output or resource) are shown as lines between the tasks. In Figure 17, it is implied that Select Vendor is dependent upon Evaluate Vendor being completed. When there is a number or "lag" shown on the relationship lines a start-to-start dependency is implied. In Figure 17, Document Problems can start 2 days after Analyse Current Processing has

commenced.

To develop a network diagram is relatively simple. All you and the team have to consider is (1) which tasks are dependent on other tasks either because of output or resources and (2) can other tasks which can be done while other tasks are being done? While the concepts behind developing a network for your project are easy, the process can be quite complex as there are many options available for the sequencing of the tasks. For example, Mary's team may decide to wait until they have finished their analysis of requirements before they begin to examine alternative implementation options. However, it is also possible to examine some options while analysing requirements. The process must involve an open team discussion to explore all scheduling alternatives and the final choice of network will depend on which people are available and are there some clear output-related dependencies. Figure 17 shows a partial network for Mary's project.

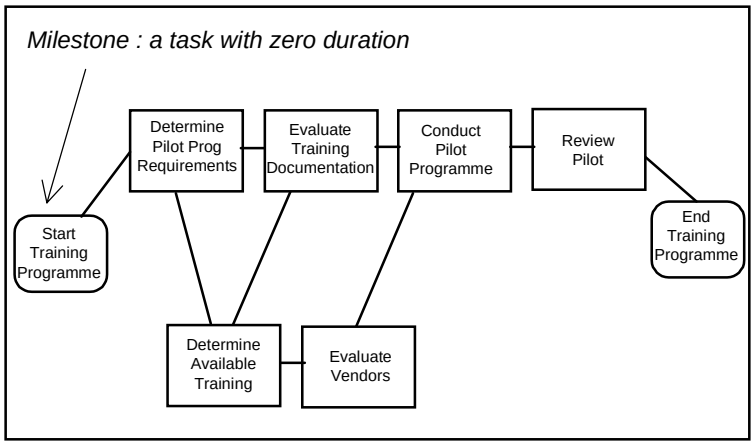


Fig. 17 - Basic network diagram

Factor in adjusted estimates and people

Once you have settled on your basic network, you and the team can then add in the estimates and allocate people to each task. Taking each task in turn, you and the team must first adjust the effort estimates that you developed in your estimation process (remember Chapter 4?) to elapsed time or duration.

The key here is to allow for non-project activities and/or work on other projects as you adjust the effort to elapsed. It's a bit strange but while

projects involve effort, they are measured in duration or elapsed days. For example, Mary estimates that it will take her 24 hours of un-interupted effort to Evaluate Training Documentation (3 days @ 8 hours per day). However, she has to spend 2 hours a day on keeping the current Industry Statistics processing underway and 1 hour per day on administration and process management. So she only has 5 hours per day for the project and the elapsed duration for Evaluate Training Documentation is 5 days (4 days @ 5 hours per day and 1 day @ 4 hours).

Often, you may also be able to schedule to enable more than one person to work on a task. This adds another dimension to your adjusting the effort to duration. Let's assume that Mary can use Fred to help her to evaluate the training documentation. They have to consider whether the task can be equally divided between them, are there communication overheads as they need to talk with each other and review each other's work and so on? As a result, they decide that the task originally estimated as 5 elapsed days (24 hours effort) with Mary working by herself will take 3 elapsed days with Fred helping. However, the total effort now involves 16 hours of Mary's work and 16 hours of Fred's time. In other words, the duration has been reduced but the cost/effort of the task has been increased from 24 hours to 36 hours. Such is the fun of scheduling. Figure 18 shows the network and adjusted elapsed estimates.

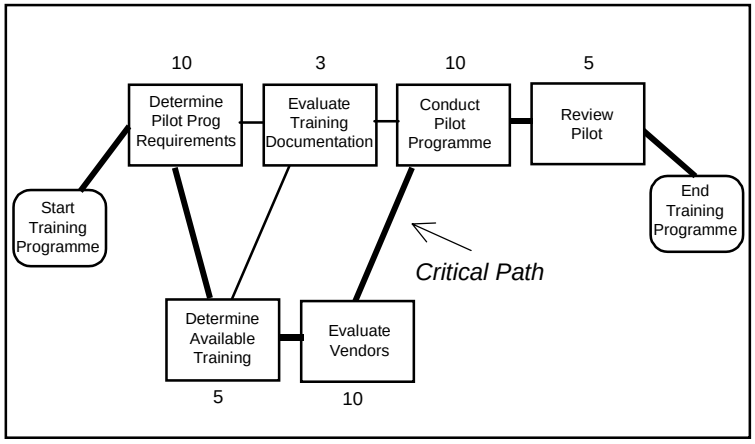


Fig. 18 - Network with adjusted estimates

The adjusted network can be then used to derive or calculate the critical path for the project. The critical path is a mathematical calculation of the longest path (in terms of duration) of tasks and relationships through the network. Finding the critical path is essential to managing your project. If the task

Determine Available Training takes 6 days instead of the 5 days estimated then the tasks - Evaluate Vendors, Conduct Pilot Programe and Review Pilot - all slip one day and the whole group of tasks is delivered one day late. However, if the Evaluate Training Documention slips one day it will not affect the related tasks. All tasks that are not on the critical path have float or slack. Float is the number of days a non-critical path task can slip before it affects the critical path. In the case of Evaluate Training Documentation, it has a float of 7 days.

Once the network has been loaded with the adjusted estimates, you and the team can derive a Gantt or task timeline diagram. This diagram displays the network as a series of bars representing the tasks and their elapsed time against a calendar. The Gantt chart is a direct sub-set of the network diagram and is developed by extracting the tasks from the network and aligning them according to a start date and the calendar.

The Gantt chart also shows tasks with float with a shadow or modified bar as the float time. You and the team will find the Gantt chart as the most useful diagram for monitoring and controlling your project as it clearly shows the tasks against the calendar. What the Gantt chart does not show is the relationships or dependencies between the tasks - only the network diagram shows those. Figure 19 shows the Gantt chart assuming Mary starts on February 25.

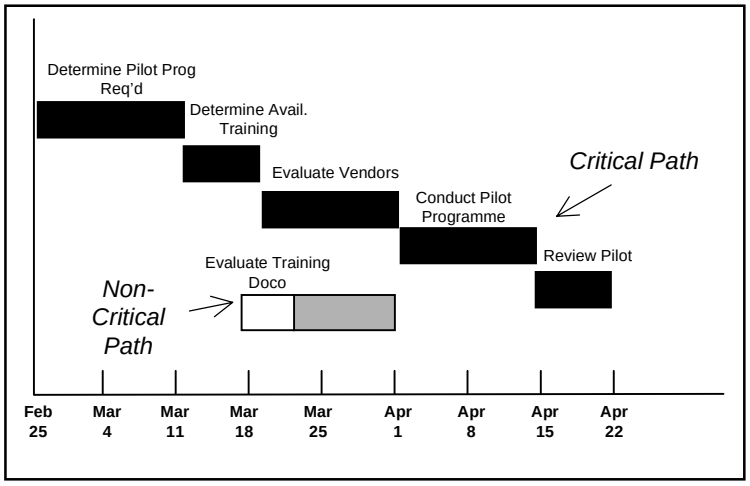


Fig. 19 - The "first cut" GANTT

Season to taste

If your project has a deadline, the development of your network and Gantt chart will show whether you can make it. If your project cannot make its deadline, then you and the team must re-visit your network diagram and see if you can overlap tasks, change the sequencing of tasks or re-allocate team members to tasks to shorten the schedule.

Let's assume that Mary and her team have to complete the training sub-set of her project by April 15. The initial schedule developed by her team shows the estimated finish date of April 22. In a team discussion, Mary decides that the team can overlap the tasks Determine Pilot Programme requirements and Determine Available Training by 3 days (she changes the finish-to-start relationship between the tasks to a start-to-start with a lag of 7 days). The team also decides that Fred can assist Mary in the task Evaluate Vendors so that the duration is reduced from 10 to 5 days as well as helping her in Evaluate Training Documentation. As a result of the re-scheduling, the team can now meet the deadline as shown in Figures 20 and 21.

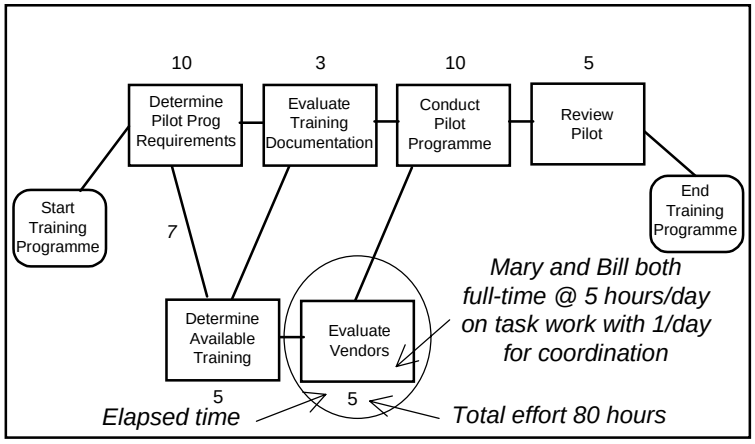


Fig. 20 - Adjusting Elapsed

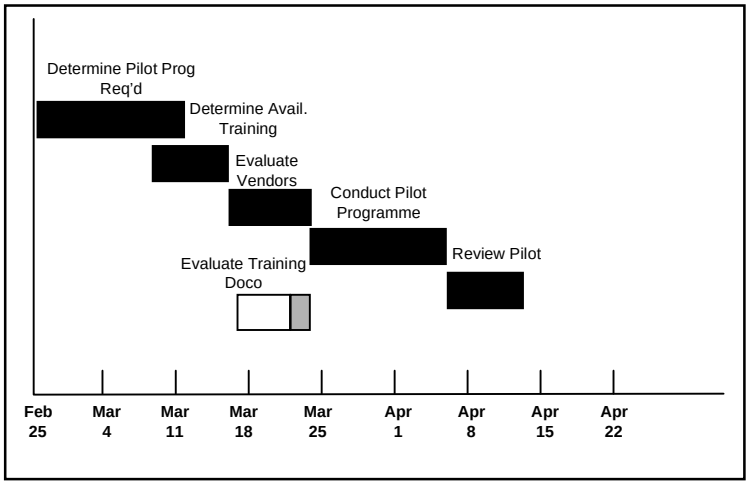


Fig. 21 - Re-scheduled Gantt chart or we can make it!

The most common way of re-scheduling a project is by the techniques used by Mary's team. By over-lapping tasks and by careful allocation of more resources (remember you may shorten the duration but will increase the effort/cost), you can normally optimise the schedule. However, you should be careful as there are some tasks that will not be shortened by adding extra people and, in some cases, adding too many people can actually increase the duration and cost because of administration and communication overheads.

A note on scheduling software

There are a number of PC-based scheduling tools that can assist the team in developing the project schedule. These software packages can automate the processes such as network diagrams and Gantt charts covered in this Chapter. Further, these tools can produce other useful planning and project tracking diagrams such as Gantt charts for each individual, resource loading (who has too much work), task lists including who has been allocated to undertake them and "turn-around" forms which allow you to enter in the actual progress.

Before we continue to look at additional processes and concepts for managing our small projects, let's summarise. At the end of your project planning session, you and your team should have documented the following information :

- project scope;
- project objectives;
- stakeholders and related projects;
- project risks and risk reduction strategies;
- the appropriate project development strategies;
- the tasks required for the project;
- estimates (effort and duration);
- project schedule;
- any constraints and assumptions.

This set of information is often termed the Business Case as it contains information relating to the project management aspects of the project as distinct from the technical details (remember Chapter 1?).

The Business Case would have been developed in a series of team-based sessions as discussed in the earlier chapters. As also discussed, when possible, the various stakeholders of your project would have been involved in these planning sessions. Any problems regarding the details of your project such as the scope, objectives and risks should be raised with your project sponsor for assistance and resolution.

Remember, although there appears to be a lot of information required for the project you're about to undertake, the main reason that you gather this information is to ensure that you, your team, project sponsor and stakeholders are in agreement as to what the project is about and what is likely to happen during the project.

The Business Case is the map for your project journey.

Chapter 6 : Keeping it together

So you and team are finally on your way and your project has commenced. As we have discussed throughout this book, there are many things that you and the team have to keep an eye on.

Just as in our journeys where planes can be delayed, bad weather can interrupt some of our planned stop-overs and the children get sick, there are many factors that can prevent the project from going to plan. Clearly, the more rigorous and participative your planning session, the more likely that you and team would have included adjustments and allowances for the risks and so on. However, to ensure that your project has not started to get “off-the-track” then, as in most activities associated with project management, you must formalise the monitoring of progress and the reporting of progress to your stakeholders and project sponsor.

In this chapter, we will cover how to track your project, what formal reports you should be producing and what should you do when things change in your project.

Project Tracking

Project tracking has one major objective - to determine whether your project is “in control”, i.e. meeting agreed deadlines, objectives, estimates and so on, or “out of control”. As soon as your project has slipped “out of control”, you should immediately undertake project re-planning which can include re-negotiation of the Business Case and technical specifications for your project. This tracking process is most simply achieved by a combination of formal tracking procedures and regular team meetings.

The initial focus of project tracking is to review the status of the Business Case to determine any actual or potential variations. Should any variation of the Business Case, in particular, the scope, objectives and risk, occur you should use formalised change control as described later in this chapter.

Apart from checking whether there are significant changes to the Business Case, a secondary focus for project tracking is for you and the team to compare the number of tasks completed with the number of tasks you

planned to complete and the actual effort and duration versus the estimated effort and duration.

In other words, project tracking is dependent on task tracking. Task tracking is undertaken by each team member working on the project while project tracking is achieved by you and the team summarising the actual task effort completed by team members and stakeholders using the project plan and as the benchmark. Most PC-based scheduling tools provide the capability of entering actual effort against the estimated effort.

Provided that you and the team followed the "5/10 day" rule detailed in Chapter 4, for purposes of both project and task, you should treat tasks as either complete or not complete; "almost complete" tasks counted as complete will give you an inaccurate picture. This approach simplifies project tracking and avoids the 90% complete syndrome wherein a task remains almost complete for a period of time. The formal term for this is called the Zero-Hundred Percent technique.

It should be noted that there are other methods of tracking completion of tasks. One technique commonly used is the Linear Progress approach where the percentage complete is calculated from the actual duration versus the estimated duration. If a task was estimated at 20 days duration and 10 actual days have been spent then the task is 50% complete. A variation of the Linear Progress technique is a subjective evaluation of the worth of the actual effort. For example, although 10 days of 20 days have been spent, the person undertaking the task subjectively assesses that it is 70% complete. However, you will find that this technique can be very distorted by subjective judgements and, more importantly, by last minute difficulties in completing a task (many of us like to leave the hardest bits until last). So you should use the Zero-Hundred Percent technique for your tracking.

While you and the team will find that project tracking is typically undertaken on a weekly or bi-weekly time-frame, it should be emphasised that as soon as a team member or stakeholder realises that they will not meet their task deadline, i.e. they are "out of control", they should notify you so that the requisite corrective action can be taken. Clearly, this is vital for all tasks on the critical path of the project. For non-critical path tasks, this action would only be required if the change exceeds the available float for the task.

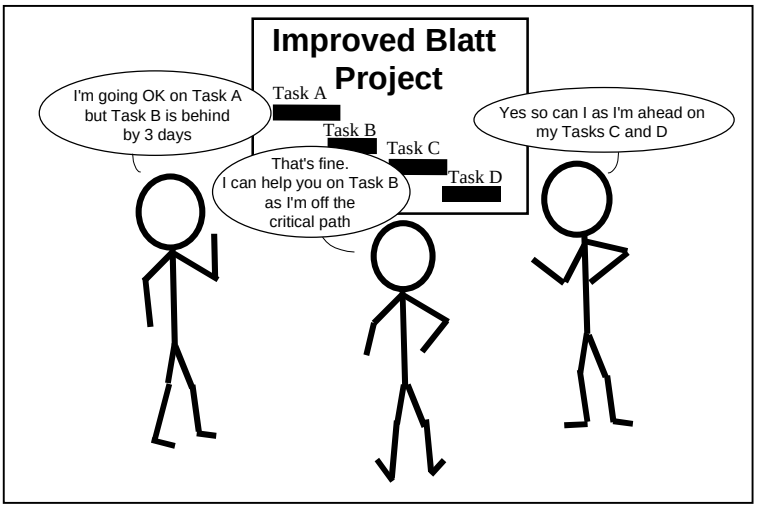


Fig. 22 - Project tracking meeting

An useful diagram for task tracking is a Gantt chart for each person on the project (see Figure 23). Most P.C.-based scheduling tools will provide this chart. These charts provide each team member with a clear picture of their individual work effort while the overall project Gantt chart provides each team member with a "common vision" of how the effort of all team members combines in the project.

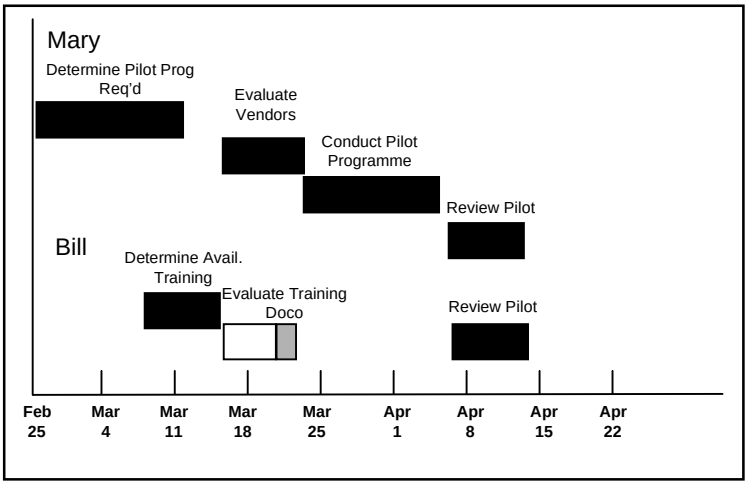


Fig. 23 - Individual Gantt : an essential tracking model

The other focus of project tracking is to collect data to assist you in costing and in the creation of an estimating history. This involves project you and the team members recording actual and elapsed time spent on the various phases/tasks of the project.

The actual work effort and actual elapsed duration spent on each project phase/task should be recorded daily by each project team member on a project/task tracking document.

This information is required to assist in collecting an estimating history for future projects and, in some cases, for the accumulation of costs for examining the cost-benefits of the project. You should be clear that tracking effort and duration is not a time-keeping or personal evaluation document. It would be quite legitimate for no work to be done on a project task during a day.

It is not necessary to "balance" the number of hours each day or to ensure that the entire 8 hours of the day are accounted for. Project tracking tracks and monitors projects, not people.

Using this approach you and the team can then assess the accuracy of the estimated work effort versus actual work effort and estimated elapsed duration versus actual elapsed duration and, where necessary, adjust the schedule as discussed in Chapter 5 and re-plan the project.

You and team members may also wish to track work on other activities such as support of existing products, activities such as meetings, administration of your people, travel costs and so on.

Project reporting

The format and timing for your project reporting will depend on the length of the project i.e the shorter the project, the shorter the reporting cycle. In Mary's project, the estimated duration of the project was 4 months, so she and the project sponsor agreed that a fortnightly project report was required.

The essential information that should be forwarded to your project sponsor

and key stakeholder areas is:

- the status of the project, i.e. is it still proceeding to plans or not;
- if not, what is the revised situation and causes for the variation;
- what actions have been taken by the team to solve any problems;
- what alternative scenarios are available;
- what actions can be taken by the project sponsor and stakeholders; and
- revised or updated Business Case.

In addition, project reporting could also involve an aggregation of actual costs to date for the project.

Control of project change and variation

Despite the best of our intentions and plans, it is almost inevitable that the need for change will occur some time before you finish your project. What you need is a pre-agreed process to evaluate and process the impact of changes to the Business Case and the re-planning of your project should the impact be significant.

In this context, you will find that changes can be internal or external:

- *internal* changes are those that arise during project development due to mis-understanding of requirements, estimation errors, project team member changes, invalid assumptions and technical issues that could not be foreseen during the initial planning of the project;

- *external* changes are those that arise through changes in stakeholder or client requirements, new policy decisions, new/changed ideas, requirements of other projects and so on, which were not part of the original product specification.

Although it is likely that an internal change will almost always be accepted by the team as being essential, for control purposes, both internal and external changes must be treated in the same manner.

Control of changes involves three steps - request for change, evaluation and decision:

- request for change

  All requests for change must be documented no matter what the source, otherwise you will lose track of your project. The requirement is for a brief note addressed to the you and the team which must include the originator's name, date of request, description of the problem addressed, description of the change and justification for it.

- evaluation

  You and the team must evaluate the change. This would be normally achieved through the convening of a team planning session which would assess the following:

  - is the change really justified?

  - if justified, is it essential that it be made at this time or could it or another feature be deferred until after the Post-Implementation Review phase at the end of the project?

  - does the change alter the scope, objectives and stakeholders of the project?

  - what tasks, whether completed, in progress or to be commenced, would be affected?

  - estimate of work effort and duration required to implement change?

  - will it require re-scheduling of the project and/or extend the completion date of the project and/or a change of project development strategy?

- will it require additional resources to carry out?

- does the change impact across sub-projects or components?

- does it alter the complexity and risk of the project? and

- what risks are involved whether the change is implemented or not implemented?

- decision

  Assuming that you have no doubt that change should be made at this time, and provided it will not require additional resources, alter the risk, alter the Business Case and/or extend the completion date of the project, it can be accepted.

If there is some doubt, or if the change is very extensive, you should call a meeting between stakeholders including the requester of the change. This meeting should discuss all aspects involved and come up with a recommendation for the sponsor to proceed or otherwise.

If you decide to adopt the change, you and the project team must take the necessary steps to put it in train. This will mean that you should conduct a new project planning session session. It must be remembered that whenever the project moves “out of control” as a result of either external or internal change, you must conduct another project planning session.

For example, in Mary's project, one of her clients requests changes in the way in which the statistics are being coded. As Mary's project's deadline cannot be extended, Mary decides to change the development strategy in her project to accomodate the changes. She chooses to move from the original Sequential release to a Concurrent Release strategy by keeping her initial team working on the original specifications and to add a new team member to alter the codes as a new release.

In most projects, by renegotiating the project's scope, objectives, resources,

deadline and strategy, you can manage the changes to your project. The key is to make these negotiations open and participative.

So you've planned, tracked, reported and managed the changes to your project. You and the team have just implemented the changes that your project was developing. Congratulations!

However, your project is not quite over yet.

Chapter 7 : Well, how did you go?

So you've planned, tracked, reported and managed the changes to your project. You and the team have just implemented the changes that your project was developing. Congratulations!

However, your project is not quite over yet.

Just as after our journey, we tend to reminisce and perhaps bore our friends with videos and photos of our favourite places, there are a few important post-project activities that you and the team need to complete.

In this chapter, we'll discuss the stabilisation process, the post-implementation review and the planning of any additional development on your product.

Project stabilisation

Once your project has implemented the changes or new product that it was developing, there is typically a period of time where the team will be required to support the use of the product or changes in procedures.

Initially, you and the team would normally be required to provide two important post-project services during this period:

- defect repair

  It is rare that you and team will manage to deliver a perfect outcome. Let's face it - developing a new product or set of procedures is very different to what we are used to doing and is often very complex. So making some mistakes is to be expected. As people start using your new product or procedures, they will find errors or defects or problems. As these problems are raised with you and the team, you should record what the problem is, who raised it and how you are going to fix them. You will find that many of the problems can be corrected quickly and depending on

resources, you should implement the problem fix immediately keeping a track of the effort required to implement the fix. In some cases, the effort required to fix the problem could be major. In these cases, you should leave these until you have started planning future development or enhancements (see later in this chapter);

- consulting

The other service that you and the team will have to provide for people using your project's outcomes will be providing advice and consultancy. Some of the issues raised with your team will not be errors in the product itself but rather mis-understandings resulting from ineffective education and documentation on how to use the new product or service changes. In most cases, you'll be able to answer these questions over the phone. As with defects, you and the team should record who called, what was the problem, how long did it take you to resolve the query and are there any follow-up actions required?

Depending on the size of the changes that your project has implemented, the project stabilization period would generally range from 1 week to a month.

Post-implementation review

As shown in Figure 24, the new product or service should eventually become relatively stable and established as part of the way of doing things. Once you notice that the level of defects and consultancy are dropping, you and the team should begin planning to conduct a formalised review of how well your project went.

Whereas in your travels, the evaluation of how your journey went tends to be informal and ad-hoc, in project work, it is very important to review and document the successes and failures in your project.

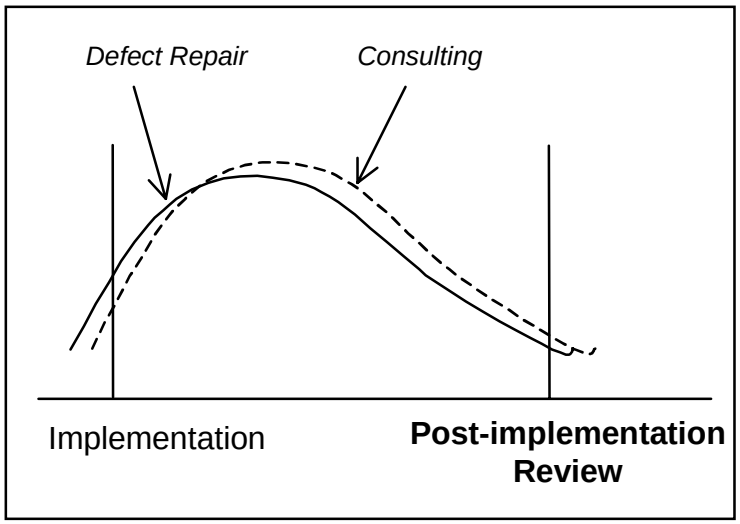


Fig. 24 - Project stabilisation pattern

The conduct of a Post-implementation Review or PIR (for those who like acronyms) is a normal project management activity. It serves a number of purposes :

- it measures success

  Your organisation would have invested your time and, in many projects, substantial investment in equipment to run the project. It is important for the team to determine how well the project met its Business Case (particularly the objectives, costs and any benefits that the team and sponsor identified at the beginning). If you planned and managed your project as we've described in this book, you should have a Business Case that can be the basis for the review. In general, the process would involve a series of interviews and, if appropriate, surveys of the people impacted by the project;

- it provides a vehicle for learning

  You and your team will have learnt many things throughout your project. It is important that, before you all move back to other work, you should have a chance to stop and document the things that you picked up on the

way. Typically, you would be interested in how well your estimates were made, what risks occurred and what other factors did you miss. By writing these down, you can give other teams about to undertake other projects a chance to avoid your mistakes and gain from your successes;

- it marks the end of the project

This is a personal factor. In many cases, the team will experience a feeling of anti-climax after the project has implemented the changes. This feeling is to be expected after all the hard work and sweat and tears that you and the team would have put into the project. The conduct of a Post-implementation Review provides a good psychological end to the project as the team will have a clear picture of how well they really did.

In a PIR, there are two things that you are reviewing. The first is the product and the second is the process. In reviewing the product, you would focus on things such as whether the product met the clients' and sponsor's requirements; how well has it been accepted by the people impacted by the changes and how well is it running in the business place. The form in Figure 25 could be used as a basis for surveying the various users of the product.

Post-implementation Review Survey

Product :

Product quality	Poor	Excellent
Level of product support	Poor	Excellent
Product documentation	Poor	Excellent
Impact on people/org	Poor	Excellent
Overall impression	Poor	Excellent

Other comments :

Person/Area :

Fig. 25 - Post-implementation Review form - Product

The review of the process is really about how well did you manage the project. This component of the review would focus on your estimates, risk management, change management, communication with stakeholders and so on. The form in Figure 26 provides some of the factors that you and the team should review in this area.

Post-implementation Review Survey

Project :

Did the project meet objectives ?	☐ No	☐ Partial	☐ Yes
Did the project meet cost estimates?	☐ No	☐ Partial	☐ Yes
Did the project meet schedule ?	☐ No	☐ Partial	☐ Yes
Did the project deliver benefits ?	☐ No	☐ Partial	☐ Yes
Did the project experience changes ?	☐ No		☐ Yes

If Yes or Partial to any questions, summarise situation

Lessons learned :

Fig. 26 - Post-implementation Review form - Process

You should discuss these areas with all key stakeholders and users of your project's product. The results of these surveys should be documented and summarised and given to your project sponsor.

The results of the PIR would also be stored with your project's Business Case for access by other project teams. Once this is completed, you have a couple of final tasks to undertake.

The first is to organise another activity - the post-project celebration.

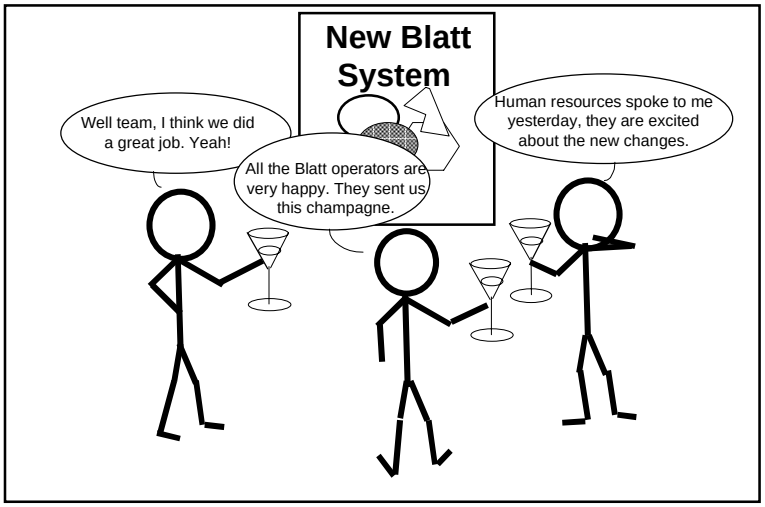


Fig. 28 - A very important post-project activity

Chapter 8 : Additional Tips for Travelers

Throughout this book, we have been discussing the basic techniques for managing your small projects. By using these techniques, you should find that your project does succeed and that you and your team enjoy the process.

In this chapter, we'll cover some additional techniques that you may wish to use on more complex projects. Sometimes you'll find that a small project in terms of time and effort may still be complex in terms of the changes that it is bringing to your organisation. In addition, we have included a typical list of the people who could provide consultancy and advice to you and your project team.

Analysing stakeholders and related projects

As we covered in Chapter 2, you and your team will generally need assistance from people outside your project and its organisational area. To remind you, some of these people will be the sponsor of your project, the clients or users of the project's deliverables, support groups and other project teams.

For some projects it may be useful to more rigorous in examining your stakeholders and any related projects. In particular, for stakeholders, you should determine which areas or people are the stakeholders, what service or services you require from them, who is the person who is prepared to act as the contact person or responsible agent and whether they are an essential stakeholder. If they are on your critical path (that is for each day they delay providing you with the service, your project is delayed a day) or they are important from an organisational point of view (a senior manager for example), then, you would treat them as essential. There may be non-essential stakeholders as well. These groups may require information about the project as distinct from providing a service. For example, the Finance group may need regular reports on expenditure. Essential stakeholders (or the contact person) should attend all your project planning sessions as discussed throughout this book. Non-essential stakeholders should be sent copies of your Business Case and any major project reports.

Your project may also have related projects. These are projects that may be

either dependent on your project's deliverables or alternatively, may be producing new changes, products and so on that your project requires to be successfully completed. You and the team can identify a similar set of information regarding related projects as for stakeholders.

As for stakeholders, a related project may be related to you by new equipment, funding, resources, data and knowledge. For example, in Mary's project, she has a related project - Office Automation - that she needs to install the computers that she and her team are going to use in her project.

It is important to remember that if you fail to identify all essential stakeholders and related projects during your planning sessions, then they will be extremely difficult to deal with at a later stage as they may not be able to provide the service you require at short notice.

Figure 28 provides a sample form that you can be use to document your project's stakeholders and related projects.

Stakeholder/Related Project

Project : ***Industry Statistics Improvement*** Date : ..2../..5../..99...

GROUP/PROJECT	SERVICE/ RELATIONSHIP	CONTACT PERSON	ESSENTIAL/ NON-ESSENTIAL
Computer Services	*Systems development*	*Fred Bits*	*Essential*
Human Resources	*Job specification*	*Joan Lee*	*Essential*
John Smith	*Sponsor*	*John Smith*	*Essential*
Accommodation Re-design Project	*New furniture*	*Jane Blotter*	*Essential*
Office Automation Project	*New computers*	*Elvyn Jones*	*Essential*

Fig. 28 - Analysing stakeholders and related projects

Analysing and controlling quality

Quality is a difficult concept for project people. Whereas each one of us has a pretty good idea of what we personally regard as a quality car, shirt, toilet roll or biscuit, we would also recognise that, in this context, quality is a personal thing. It is in the eye of the beholder.

However, as Phillip Crosby [1979] noted, quality is conformance to

requirements. If you are concerned with environmental issues then your requirement for a toilet roll is that is is made from recycled paper. If you are a small child then your requirement for a toilet roll is that it is strong so that you can get the whole roll off the toilet roll holder without it breaking. In other words, different people have different requirements and, as a result, different definitions of quality. While this is the case in our personal lives (unless you see the choice of toilet rolls as a public issue), you and the team should attempt to define the expected quality for your project's deliverables. This is because many of your stakeholders may have different requirements (i.e. different quality expectations). In Mary's project, for example, the computer people are concerned that the system is efficient while Mary is more concerned about the documentation and the impact of the new system on existing working patterns.

For most projects, quality will be a combination of the following attributes:

- conformity

  The degree to which the product or service must meet the functional and technical requirements. For example, Mary's new system does not have to have all the changes required at one time to be useful for her clients;

- usability

  The ease of use and understanding of the new product or service. Mary and her people want the new system to be easy to use and understand without a lot of training;

- efficiency

  The degree to which the product or service must be efficient in its operation. Mary does not care how slow the system is as long as it is easy to use;

- maintainability

The ease with which the product or service can be maintained as delivered by the team. Mary wants the system to be easy to maintain as she will be responsible for keeping the system running;

- flexibility

The ease with which the product or service can be changed or enhanced. Mary wants the new system to be easy to enhance as she knows that the statistics area is undergoing a lot of changes that will need to be added to the system;

- reliability

The degree of errors and non-operation that can be tolerated by users of the new service or product. Mary has a requirement for a high degree of reliability as the system will be processing essential data;

- portability

The need for the product or service to operate in different areas or regions taking into account the differences between these areas. Mary does not need to use the system in other areas;

- auditability/security

The ease with which the product or service can be audited and made secure from illegal access or fraud. Mary does not see a need for these quality attributes in her system;

- job impact

The degree to which the product or service disrupts the existing working and social patterns of the clients or users. Mary is very concerned about the new system's impact on her people.

These attributes (and others) may or may not be applicable in your project. By developing a Quality Agreement with your stakeholders during the planning session, you can avoid confusion as to what quality means for your project.

Steps in developing a Quality Agreement

- Step 1 - Evaluate and rank stakeholders

  In conjunction with the team, you should rank the project's stakeholders as essential or non-essential as described earlier in this chapter;

- Step 2 - Determine project's quality requirements

  Using the form in Figure 29, determine in conjunction with the team which of the Quality Attributes are Mandatory, Non-mandatory and Not-applicable.

- Step 3 - Determine and review stakeholder's ranking

  Preferably in a group session, interview each essential stakeholder and review and determine their quality requirements using the same process as in Step 2;

- Step 4 - Derive final ranking

  Evaluate all mandatory Quality Attributes looking for a majority agreement between the team and stakeholders (say, where 80% of the stakeholders agree then the attribute is mandatory for the project);

- Step 5 - Review Quality Agreement with senior management

The final rankings should be reviewed with your project sponsor and any unresolved conflicts in the stakeholder's rankings should be raised for resolution by senior management.

Project : Date : ..../..../....

ATTRIBUTES	KEY EXTERNAL GROUP OR STAKEHOLDER			
CONFORMITY Does the product have the desired data, function and procedures as required?				
USABILITY Is the product easy to use, learn and understand from the end user's perspective?				
EFFICIENCY Does the product use technology and other resources efficiently?				
MAINTAINABILITY Is the product easy to maintain and correct?				
FLEXIBILITY Is the product easy to enhanc in order to add or modify process, function and data?				
RELIABILITY Does the product operate without failure and with consistency?				
PORTABILITY Is the product easy to migrate to another hardware, software or business environment?				
AUDITABILITY/SECURITY Is the product secure from unauthorised access and is it auditable?				
JOB IMPACT Does the product provide acceptable working environment for direct users?				

M - MANDATORY **N.A. - NOT APPLICABLE** Page ..... of .....

Fig. 29 - Quality Agreement

The Quality Agreement should be added to the Business Case and you can use the Quality Agreement as another component to review during the Post-implementation Review process.

A note on Quality Reviews

Having determined the expected quality for your project, you should set up a process during your project to ensure that the various deliverables that you are producing are meeting the agreed quality requirements.

The most common technique for reviewing the quality of a product is a team-based session where the team members assess each deliverable from the point of the Quality Agreement. For example, Mary and her team produce the system specification for her new statistics system. In a quality review, her team reviews the specification from the perspective of Conformity, Usability, Maintainability, Flexibility, Reliability and Job Impact.

These reviews should take about an hour and should focus on finding any major errors. However, be careful here in ensuring that the process is constructive in its criticism. Remember, it is OK for a person to make a mistake. It is also OK to find the mistake. It is not OK to make them feel bad about the mistake.

It is a good principle to have all major deliverables reviewed by at least two people other than the person who produced the deliverable.

Who else can help you?

It is important to look for help when planning and managing your project. You are not alone in grappling with some of the issues that will confront you and your team. There are a number of people and groups within your organisation that can give you advice and assistance. These may include :

- Finance people

- Human Resource people
- Your computer group
- Training people
- Strategic Planning people
- Marketing people
- Internal Audit folks

Change is a scary thing for many people. As projects change the way things are, it is normal for you, your team and the people who are stakeholders, to be apprehensive about your project.

Just be cool. Be aware that some people will be threatened by change and you'll find that project work is very exciting.

Do good project work and have fun.

Appendix A : Glossary of terms

Actual Effort

The actual effort usually in hours spent by a team member on undertaking a task.

Assumptions

The assumptions made by the project manager and team when planning their project. Assumptions such as availability of team members time, accommodation for the team, availability of support and technology are common during planning and it is essential that these assumptions are documented during the planning session/s.

Benefits

The returns or payback expected to be obtained from the successful completion of the project. Returns or benefits would most commonly include Reduced or Avoided Costs for existing procedures, Improved Service to clients or internal areas such as easier access to information and Increased Revenue from new or improved products.

Business Case

A set of key project management information developed and refined during the project planning sessions. It includes scope, objectives, benefits, costs, estimates and so on. The Business Case summarises the management and financial issues associated with the project. It is the basis of change control and is a “contract” between the project manager and project sponsor.

Critical path

The group of tasks that aggregate to the longest duration (in time) through the project. These tasks have a set of inter-dependencies that result in the delay in one task on the critical path immediately delaying all the other tasks on the critical path.

Critical path method (CPM)

A technique for calculating the critical path for a project by examining the inter-dependencies (or relationships) between tasks and by deriving the longest or critical path by examining the length of the tasks and which tasks are dependent on other tasks - see Network.

Critical task

A project task on the project's critical path. It is important to note that critical in this context does not mean critical in terms of technical or organisational perspective, but rather, critical in terms of duration and relationships. For example, gaining approval from Human Resources for people to work on the project may be critical to the project but it may not be on the critical path.

Concurrent strategy (concurrent release strategy)

The breaking up of a product into sub-products or components and the development of those sub-product as individual sub-projects which are underway at the same time. This strategy enables different team members to work on specific components of the product as quasi-independent projects.

Constraints

Specific management or technical limits that are part of the environment in which the project must be developed. Typical constraints include fixed deadlines, fixed resources, fixed costs, organisational standards (e.g. Audit, EEO, Occupational Health and Safety, etc) or fixed technology.

Costs

The estimated and actual costs incurred by the project. Typical costs include people (salary, overtime, accommodation and other on-costs), equipment such as computers and office equipment, travel costs and organisational support costs (secretarial, preparation of documents, management and so on).

Deadline

The expected date upon which the project must have completed the development and implementation of the required outcomes.

Deliverable (or output)

The output from tasks in projects. The nature of deliverables depends completely from the nature of the task. Some tasks have written or intellectual deliverables such as reports or revised policy and others produce physical deliverables such as computer programs, new

physical environments and new equipment.

Delphi estimate

A team-based estimation technique that uses structured team discussions of estimates (best, likely and worst), risk and other assumptions to develop a set of estimates that can be averaged.

Duration (elapsed effort, calendar days)

The number of calendar days required to undertake and complete a task. The duration reflects the effort required adjusted for non-project activities or other project tasks required to be undertaken by the person scheduled to complete the project task.

Fast-track strategy

An approach to undertaking projects which involves the team undertaking the minimum activities required to develop the product with the aim of implementing the product as quickly as possible. This strategy is generally associated with high risk projects such as projects with fixed deadlines and innovative requirements.

Float (or slack)

The time that a non-critical path task can slip (take longer than estimated) before the task impacts the critical path by delaying the start of a dependent task on the critical path of the project.

Float task (non-critical path task)

A task that is not on the critical path or alternatively, a task that has float.

GANTT chart

A technique developed by Henry Gantt that shows the duration of tasks against a calendar or time-frame. These charts generally do not show dependencies as shown in a network diagram. However, tasks on the critical path are shown using different graphics than those not on the critical path.

Lag (delay)

The time delay between tasks that have a relationship other than finish-to-start.

Methodology (see project development life cycle)

A pre-defined set of tasks that are designed to provide a guide or check list for developing and implementing projects. The formal term "methodology" means the study of method however it has been distorted over time to generally mean a work breakdown structure or list of tasks.

Monolithic strategy

A traditional approach to developing and implementing products that involves a structured and sequential development of the product as an integrated whole through a number of phases (Requirements Analysis, Design, Build and Implement).

Network (PERT)

A technique for showing tasks, their inter-dependencies and the relationships between the tasks. There are two major types of relationships - deliverable (one task requires the output from another before it can commence) and resource (one task needs the people undertaking another task to finish so they can start the dependent task). There are two common types of relationships - finish-to-start (one task must finish before the next can start) and start-to-start (one task can commence after another starts with the elapsing of a specific time delay or lag).

Non-critical task (see Float)

Objectives

The corporate, business or project objectives that the project is expected to support and implement as changes in the organisation. Project objectives should reflect the corporate mission statements and objectives and should be stated in a specific, measurable and precise manner. The project's objectives are the prime determinant of the project's success and are the mission statement for the project team. Scope and objectives are inter-related as scope defines the boundaries in which the objectives must be achieved.

On-costs

Non-salary expenses incurred by people working for an organisation. These would include superannuation, overtime, allowances, hospital and insurance fund payments.

Process work

The work undertaken by people working in the existing organisation structures and procedures. This work generally repeats over short time-frames, is documented, easily measured and operates within the status-quo of the organisation. It is the exact opposite of project work.

Project development strategy

The overall approach to the development of the product. Various strategies provide alternative approaches which have different dynamics and organisational impact (see monolithic, sequential, concurrent and fast-track strategies).

Project development life-cycle (see Work Breakdown Structure, Methodology)

Project

A group of tasks that are inter-related and are designed to change existing organisation structure, procedures, policy and systems. Projects are dynamic and involve flexible and pro-active management. Projects impact on organisations and as such have many external people who need to be involved in the process.

Project work

Project work involves management and technical tasks that are fundamentally different to process work tasks. Typical project tasks are unique, difficult to measure and standardise and can often require long timeframes to complete.

Project Manager (Project Leader)

The person responsible for the success of the project in conjunction with the project sponsor and team. The project manager must ensure that the processes of project planning, tracking and reporting are undertaken in a rigorous manner. The project manager is also responsible for managing the relationships with other related groups (see Stakeholders) and related projects.

Related Projects

Related projects are projects that are inter-dependent with the project. These projects may be

related in terms of staffing, technology, products and procedures. For example, one project may need to revise Human Resource policies before another project can implement new work processes.

Risk (Project Risk)

The probability that a project will succeed or fail. The higher the risk of the project, the higher the probability will fail. Risk is analysed as part of the project planning process by examining Risk Factors.

Risk Assessment

A structured process involved the examination of factors which are operating on and in the project that can affect the risk of the project. There are three categories of risk factors in projects - the risk of the product, the risk of the team and the risk of the target or client area.

Risk management (containment strategy)

A process for negotiating, before the project starts, to reduce or eliminate high risk factors in a project. Typical risk management strategies involve identifying high risk factors e.g. inexperienced team members, unstable or uncertain requirements and negotiating with the project sponsor and stakeholders actions to manage the risk and the impact of the risk.

Schedule (project plan, timeline)

.A graphic representation of tasks, dependencies between tasks and task duration against a calendar (see also Network, Critical Path). The schedule is used to determine deadlines and key review points.

Scheduling tools (project management software, project scheduling software)

.Computer software generally marketed by vendors that provide automated support for developing network diagrams, critical paths, schedules, resource costs, duration, project tracking and various reports to enable the project manager and team to evaluate resource loading, costs and progress.

Scope

The boundary of the project manager's responsibilities and project impact. Scope and objectives are inter-related in the sense that scope states the area of responsibility of the project manager while objectives state what has to be achieved within the scope.

Sensitivity Analysis

The use of ranged estimates of project effort, benefits and costs. These are stated as Best case, Likely case and Worst case (see Delphi estimate)

Sequential strategy (sequential release strategy)

An approach to undertaking the project where the product under development is partitioned into sub-products or components. One component is developed first and while it is being used by clients, the development of the next component is then commenced.

Sponsor (Project Sponsor)

A senior manager who is the initiator of the project and the key executive support for the project manager and team. The sponsor has a number of responsibilities including approval of the Business Case, review of project progress, assistance to the project manager in areas of difficulty and evaluation of the project's success on completion.

Stakeholders

People who either have to provide advice, expertise, resources or technology to the project team or who are expecting similar services from the project and who are outside the direct administrative responsibility of the project manager.

Steering Committee

A representative group of senior managers who have similar responsibilities to the Project Sponsor (who would be on the Steering Committee). Steering Committees would normally be required for larger projects only.

Work breakdown structure (project development life cycle)

The tasks required to complete the project. The partitioning of those tasks into sub-tasks to enable the team to better understand what activities are required to undertake the project.

Appendix B : Cool References

R. Thomsett, *Third Wave Project Management*. Englewood Cliffs, N.J. Prentice-Hall, 1989.

This book takes the ideas in our Busy Person's Project Management Book further. It is IT oriented but you can still get a lot of additional information and techniques useful for all projects from it.

J. Davidson Frame, *Managing Projects in Organisations*. S.F., Jossey-Bass, 1985.

Great book. One of the few other project management books that we would recommend. We especially like the "people stuff" in Davidson's approach.

C. Handy, *The Age of Unreason*. Boston, Ma., Harvard Business School Press, 1989.

Charles Handy's book has already become a classic. He talks about the increasing importance of a project culture without specifically mentioning it. Worth checkingout.

P. Crosby, *Quality is Free.* New York, Mentor Books, 1981.

The ultimate book of quality and why it matters. Crosby started the whole shebang.

Fast Company

A great magazine on project and project cultures. Inspirational.