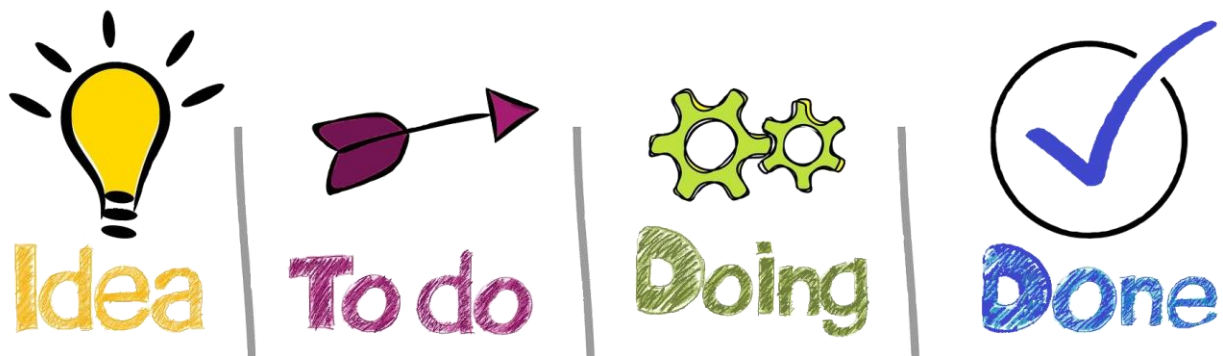


Managing Your Research Project Masterclass



Many researchers find that project management is a responsibility that seems to creep up on them while they are busy doing something else – usually working on a research project.

For most, project management is a task for which they are given little or no formal preparation.

Awareness of the structures and requirements of project management can make it easier to write grant applications, plan project work more effectively, identify risks, manage resources and task plans more efficiently. Effective project management can reduce the stress or fog associated with getting the job done properly, on time and on budget.

This is not a workshop on PRINCE 2, MS-Project or any formal management system.

Rather, this workshop will examine the nature of project management from the perspective of a researcher proactively taking responsibility for their own research and planning and for managing additional research projects more formally.

Three aspects of research project management skills are needed:

- Managing yourself – skills in personal effectiveness, prioritisation and organisation
- Managing your project – an introduction to getting results on time and on budget
- Influencing other people – both above & below you in the management structure.

In this short masterclass the focus is only element two

“Managing your project – an introduction to getting results on time and on budget”



Some unique characteristics include:

Why do projects fail?

No matter how you picture it, projects operate under a set of interdependent constraints.

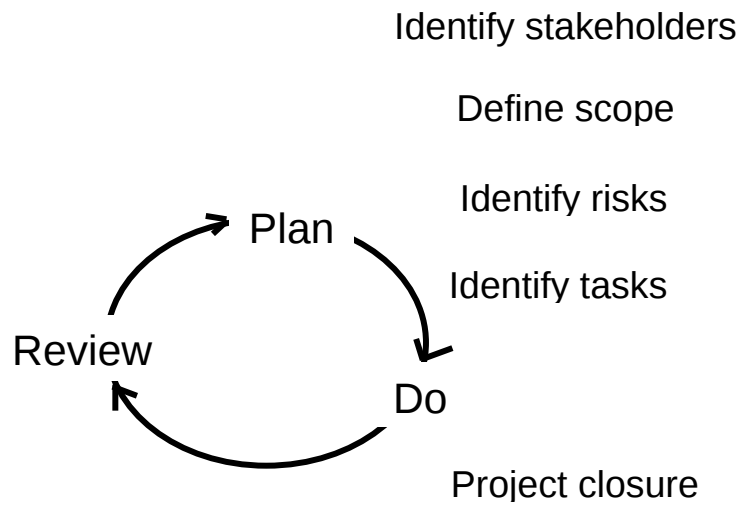


How will the success of your project be judged?

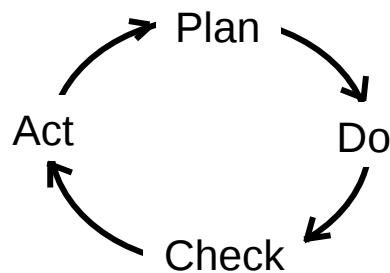


Planning your project

There are many important steps in planning a project. Many are addressed during the grant application stage but it is essential to revisit them just before project commencement.



While the PLAN – DO – REVIEW cycle can accurately reflect many research projects, where the goal is more focussed on the management of processes, the PDCA cycle below may be helpful.



Who are the stakeholders in your project?

What do they bring to your project?

What do they expect from your project?



Define the scope

There are many very good reasons for re-appraising the scope of your project.

Many people assume that the scope of the project is devised and fixed during the grant presentation stage. While this may be the case, the time elapsing between grant submission and the researcher starting the work almost always means that things have changed... frequently research fields have moved on, even before the funding starts.

When a Principal Investigator (PI) recruits a good, independent, post doctoral researcher or PhD student there is also the assumption that they are allowed or expected to show a degree of initiative.

However, they may not fully understand the scope of the project agreed or expected by the PI or by the funding body or any collaborators.

Equally, an inexperienced applicant may have significantly over-promised what they can actually deliver when they were writing the initial grant application which can create real problems for the research team.

One way of assessing the scope can be to **look at the output from your work, not the actions**, activities or investigations but things delivered...

What are the deliverables in your research project?

Extending the scope of a project often happens as exciting new opportunities open up or new methods or technologies make things possible that hadn't been anticipated initially.

This phenomenon of "scope-creep" is the most common reason for projects delivering late or over budget.

Where might "Scope-creep" occur in your project?



What are the risks?

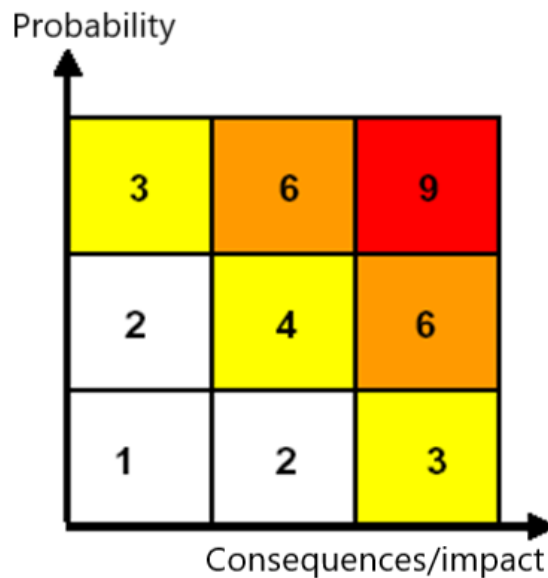
Every project has predictable risks.

Inherent in the concept of "risk" is that it is measurable. In this respect risk is different to uncertainty.

The two factors to consider are:

- a) how likely is an event to occur and b) what would be the impact if it happened?

This simple risk matrix is a helpful reminder.



In many projects, risk management is more complex.

Depending on the nature of the project and the project activities you might have different risk levels that you are comfortable with or have an appetite for, for example.

- **Hungry:** seek innovative options and make choices offering the highest reward despite significant risks
- **Open:** assess all potential options, seek greater reward, take actions to moderate/mitigate risks
- **Cautious:** seek safe options with a low degree of risk and limited reward
- **Minimalist:** very safe options with a low degree of risk which will return a very limited reward
- **Averse:** focus on avoiding risk & uncertainty. Activities will be those considered to carry virtually no inherent risk.

What are the greatest risks in your project?

... and your back-up plans?

During the implementation phase there needs to be sufficient flexibility to respond to new developments. It is vitally important to identify and to conduct regular formal reviews of progression.

How often do you plan to formally review progression?



What tasks are common to all/most research projects?

Most projects begin with writing the job advertisement... the recruitment, selection and interviewing processes can often take longer than you anticipate!

What other tasks are common to all/many projects?

- New staff induction
- Staff management meetings
- Training
- Continuing Professional Development
- Conferences
- Writing papers
- Finance review/budget control.

When will you plan to do these tasks?

How can you reduce the effort involved, the time taken?

How can you increase the effectiveness of these activities?



What are the major research tasks for your project?

You often know what needs to be done to complete your research project. There may be a logical series to follow, a beginning, middle and end, the start of one task dependent upon the successful completion of a previous activity. Other tasks might be more self-contained or independent and these can be fitted in to the programme when it is more convenient or in response to other independent constraints.

Where research tasks are relatively straight-forward and self contained one can estimate how much time it takes to complete such a task with relative accuracy. Other research tasks are much more open-ended or uncertain and estimates for how long they will take can be compared to the length of a piece of string! However, experience will allow some "realistic best estimates" to be made giving a certain minimum – maximum estimate for time.

In most projects, multiple tasks happen in the same timeframe. We normally manage this on a day-to-day basis but occasionally the demands of one set of activities overwhelms and precludes engagement in other activities. This is because they, in some way, use all the available resources (time, pairs of hands, access to equipment or facilities etc).

Henry Gantt was an engineer who gave his name to a way of organising tasks along a timeline.

Gantt charts can be very simple affairs created in a Word document, an Excel spreadsheet or with more sophisticated programmes such as MS Project.

Are there any obvious lines of precedence or necessary multi-tasking in **your** project network?

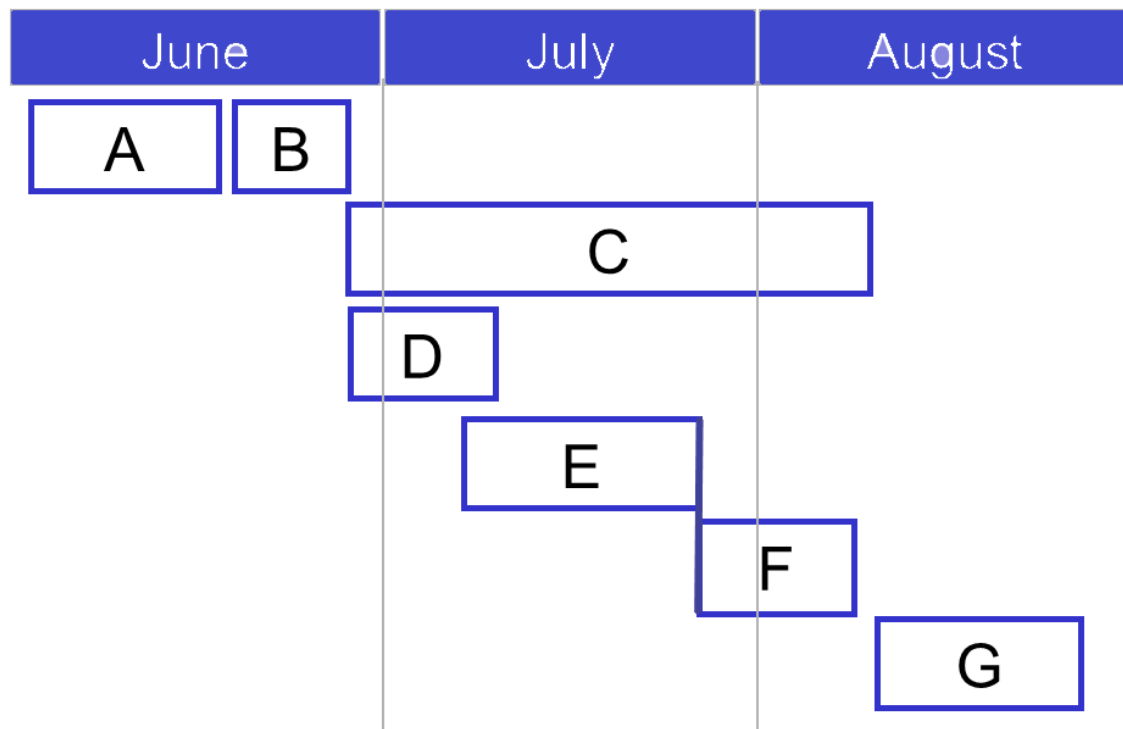
Tools such as Gantt Charts can help us to visualise and to manage related tasks in a complex project. You can immediately see the consequences of shifting or missing a deadline and the sometimes complex repercussions for other project activities.

Often the most difficult thing is to accurately estimate how long a task or activity will take.

Try to formulate the best, the most likely and even the worst case scenarios for each activity but be very careful to watch the overall effect on your total time line.



Tasks can be organised with respect to time



It is important that Gantt charts also show **key dependencies**, lines that link tasks when a later task cannot be started before a previous task is successfully completed. When tasks are linked in this way, a delay in any one will have a knock-on effect on all downstream tasks.

You can immediately see the consequences of shifting or missing a deadline and the sometimes complex repercussions for other project activities.

More sophisticated tools like MS Project will automatically highlight or alert you to potential violations when such deadlines are missed.

When looking at related activities, the **critical pathway** is that linear sequence of tasks from initiation to completion which will take longest to complete. This defines the shortest possible time for your project. Slippage of the deadlines of any task on this critical pathway will delay completion of your project.

It is essential to identify and actively manage tasks which are critical to project progression.



How do you organise your time?

At this stage in your career there is rarely time to do everything. It's a case of managing priorities.

As you are engaged in more activities you need to be better at making choices about where to invest your time effort and energy.

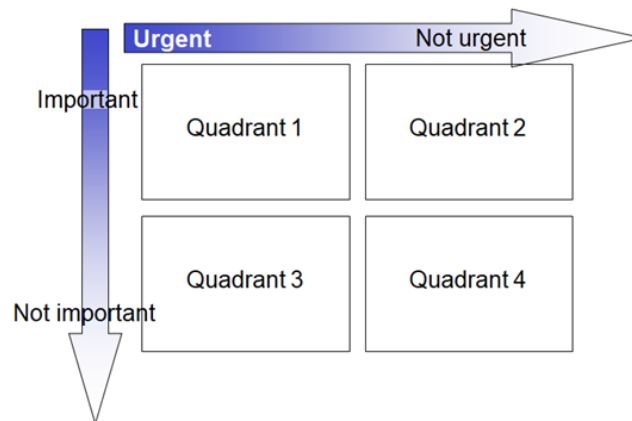
How do you decide what needs to be done first – how do you set priorities?

- This is the most urgent
- This is the most important
- My manager/most demanding client really wants this done
- This needs to be done before we/they can do that
- This needs to be perfect!
- This is what I said I'd do

There are many ways to choose or organise priorities, what matters is you actually use choose priorities and follow that plan!

You can use an Eisenhower grid - Task management matrix by asking two questions:

- Is this important?
- Is this urgent?



Once the priorities for the week are clear, you can sort your daily priorities and one useful way of categorising priorities for daily work is:

- Must do **today** : A
- Should/would like to do : B
- Could do : C
- Don't do – delegate or dump : D

What's your default driver?

It might be helpful to look-up Kahler's 5 Drivers if you're not sure!

As you make decisions it can be helpful to use these questions as filters:

- Is this central to/aligned with the project goals?
- Is this a suggestion or a need, a request or demand?
- What are the consequences of delaying this?
- What are the consequences of doing this?
- Doing this makes everything else easier!



Managing Finances

Every institution has different procedures for dealing with financial management and many offer seminars or workshops on finance for non-specialists.

At the most basic level you need to be aware of your budget and the cashflow procedure – when does the money arrive for you to spend.

If your institution has close to real time information about expenditure, committed funds and balance information, make time to review these reports regularly and particularly at busy times when a spending surge may go unnoticed. Notice that things like delivery charges can make a big difference to the price you pay.

If you have reporting responsibilities, even informally, know when financial reports or updates are due and, as far as possible, have a draft template you can use to speed up reporting procedures.

If you are involved in grant writing or preparing costings make every effort to get accurate estimates and be aware of the importance of Full Economic Costings (FEC) if it applies.

It can be very helpful to build a good relationship with a colleague in your Finance Department!

Monitoring Progress

In addition to regular evaluation of day-to-day activity it is vitally important to keep clear sight of the bigger picture including management of project financial projections. Some funding bodies operate a use-it-or-lose-it policy.

Be systematic – regularly evaluate progress against milestones/deadlines.

- Identify tasks which are slipping and why.
- will additional resource help?
- are there unexpected conflicts on resource (eg staff or equipment)
- Keep critical activities on track
- Update project plans when things change and always work with the latest version
- Most importantly BE HONEST

What meetings will you need to effectively manage all aspects of your research project?

Project Closure

Check the practical outcomes and tie-up loose ends

Write final report – have a version that tells you “What I will do differently next time!”

Write papers

Have stakeholders formally accepted outcomes?

Are “maintenance” procedures in place

Disband the Project Team – allow for goodbyes.



So what have we learned?

My objectives for this session were for you to have identified that managing successful research projects is not difficult, we simply need to remember to do it!

Particularly today we learned to -

- Be clear that projects can be managed in a structured way
- Identify discrete steps in a project management cycle
- Be aware that risk can be managed, not ignored
- Have tools to plan and organise tasks within a project
- Appreciate the importance of regularly reviewing of progress

What are my significant insights from this session?