Projects

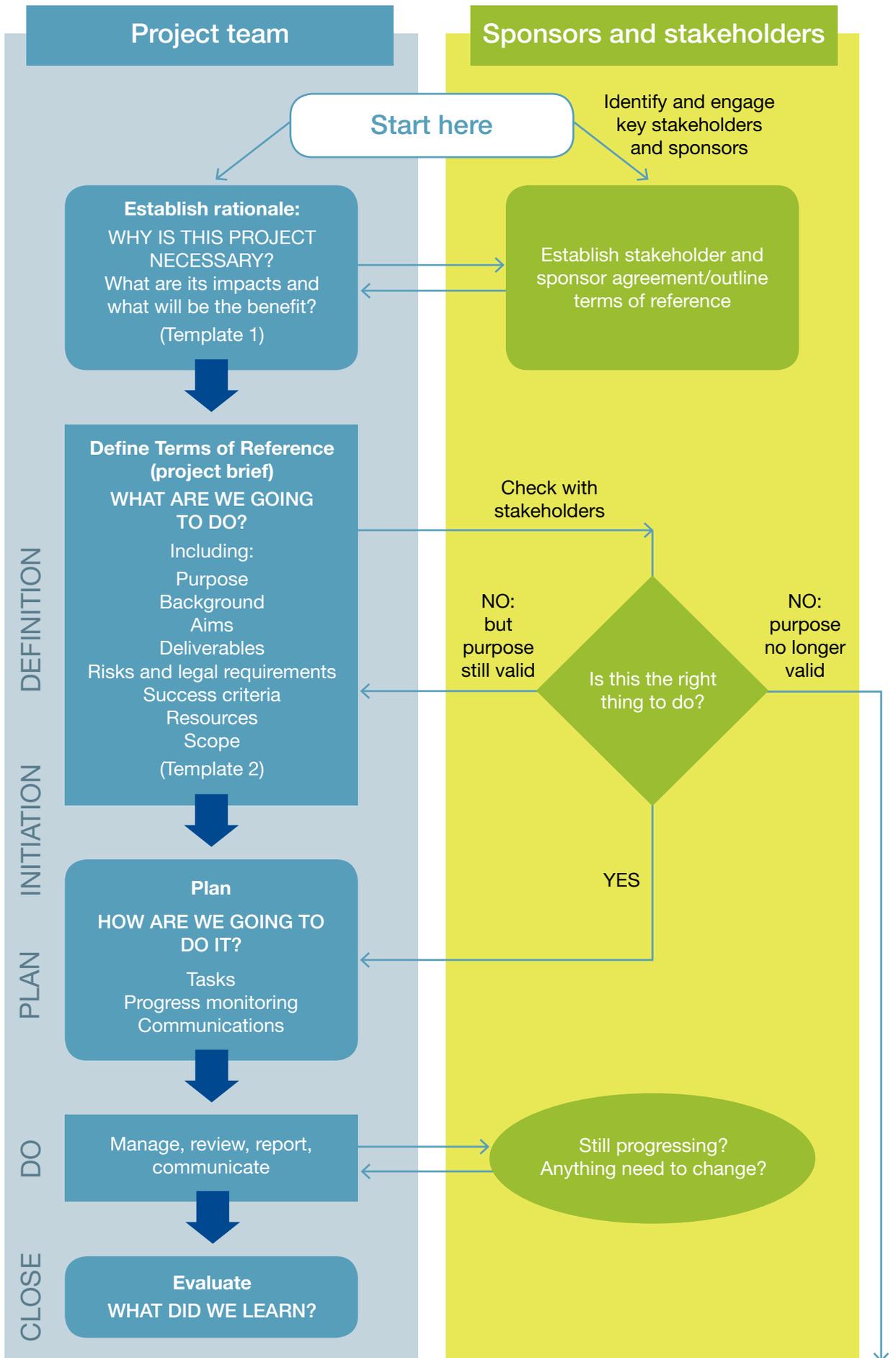*A project is a piece of work with fixed duration and clearly defined outcomes.*

Each project must have:

1 Aims: A clear overall purpose and direction, with a rationale.
2 Objectives: The overall deliverable (what will have changed on completion of the project) and the deliverables for individual stages and tasks.
3 Stakeholders: Anyone with a legitimate interest in the project and its outcomes.
4 Timescale: Both elapsed time (the overall time taken to completion) and physical time (the amount of time spent on the work of the project).
5 Ways of evaluating success.
6 Resources, both human, financial and physical.
7 Plans: Clearly communicated and understood by project team and stakeholders.
8 Ways of monitoring progress: Regular team update meetings, reports to stakeholders, feedback from end users.

The graphic below indicates a typical project as it progresses through different stages. Note that it is not a truly linear process; communication and engagement with stakeholders in particular happens in a cyclical way throughout the project.

Associated templates:
1 Rationale/business case template
2 Project brief/terms of reference template
3 Risk assessment template
4 Staff learning and development checklist
5 Communications/stakeholder engagement template
6 Evaluation template

Project team	Sponsors and stakeholders

Start here

Identify and engage key stakeholders and sponsors

Establish rationale:
WHY IS THIS PROJECT NECESSARY?
What are its impacts and what will be the benefit?
(Template 1)

Establish stakeholder and sponsor agreement/outline terms of reference

Define Terms of Reference (project brief)
WHAT ARE WE GOING TO DO?
Including:
Purpose
Background
Aims
Deliverables
Risks and legal requirements
Success criteria
Resources
Scope
(Template 2)

Check with stakeholders

NO: but purpose still valid

NO: purpose no longer valid

Is this the right thing to do?

YES

Plan
HOW ARE WE GOING TO DO IT?
Tasks
Progress monitoring
Communications

Manage, review, report, communicate

Still progressing? Anything need to change?

Evaluate
WHAT DID WE LEARN?

DEFINITION

INITIATION

PLAN

DO

CLOSE

Project planning and management tools

A huge literature exists on project management, and large, complex projects will usually involve highly qualified specialist project managers. However, a few simple tools allow anyone to think more systematically about projects and so to devise better plans and more effective project management habits.

1 Work Breakdown Structure

Most project plans start by breaking down the overall objective into smaller packages, until each parcel of work is self-contained and can be attributed to one person, team or resource. This is often done graphically as in this very simple example:
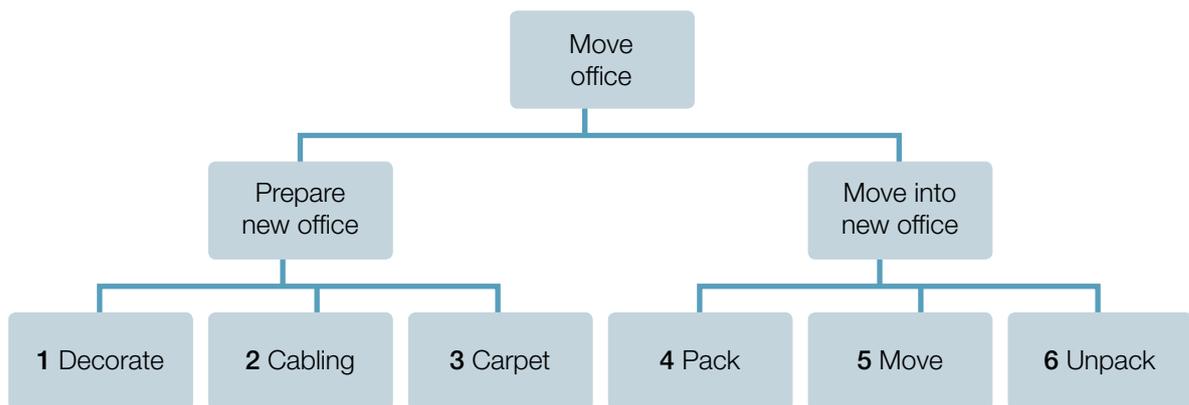
2 Dependencies

The simplest way to deliver the project above is to start at task 1 (Decorate) and proceed until task 6 (Unpack). However, this may not be the most efficient way to do things if, for example, some tasks could be done at the same time as some others.

It is useful to list the tasks and which depend on the completion of which before they can begin. At this point you can also estimate how long each will take.
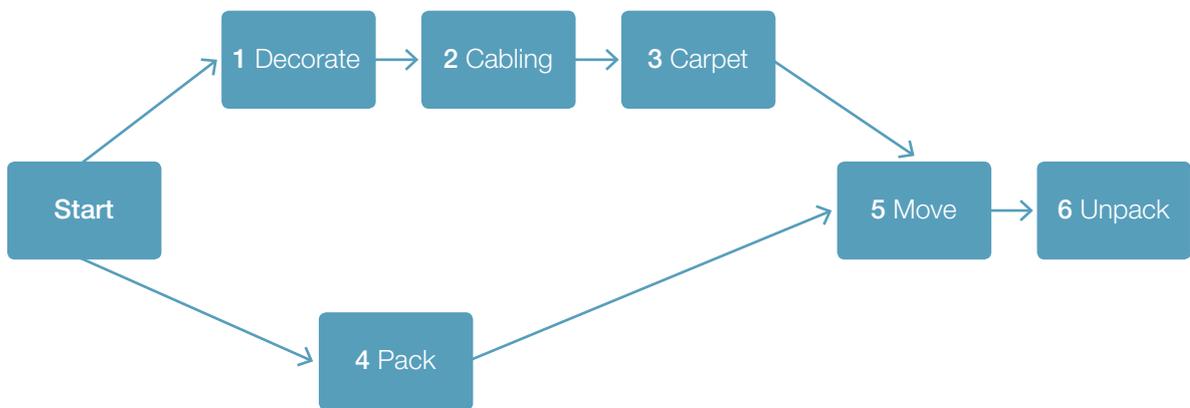
Task	Depends on completion of	Time required
1 Decorate	0	2 days
2 Cabling reconnected	1	1 hour
3 Carpet laid	2	2 days
4 Pack old office	0	1 day
5 Move equipment	4, 3	Half day
6 Unpack	5	Half day

From this example, it is clear that packing does not have to wait until the new carpet is laid, but moving equipment does.

In the real world, the time required for each task will depend on a number of factors, including the availability of resources and the difference between *elapsed time* – the overall time taken to complete the task, and *physical time* – the time spent on the task itself. For example, carpeting may take four hours of a fitter's (physical) time, but because adhesive has to be left to cure, the work must be spread over 2 (elapsed) days.

This kind of analysis allows projects to be planned to make the most effective use of time and resources, and to deliver key outcomes and milestones to a specific timetable. More complex projects are sometimes represented as *network diagrams* which show the dependencies between different tasks.

Simple example of a network diagram for the project above:

```
                  ┌──────────────┐     ┌──────────────┐     ┌──────────────┐
                  │ 1 Decorate   │ ──> │ 2 Cabling    │ ──> │ 3 Carpet     │
                  └──────────────┘     └──────────────┘     └──────────────┘
           ↗                                                                 ↘
  ┌────────────┐                                             ┌────────────┐     ┌────────────┐
  │  Start     │                                             │ 5 Move     │ ──> │ 6 Unpack   │
  └────────────┘                                             └────────────┘     └────────────┘
           ↘                        ┌────────────┐          ↗
                                    │ 4 Pack     │ ────────
                                    └────────────┘
```

Diagrams like this can help planners visualise and make sense of a set of inter-related tasks and allocate resources appropriately. Usually this would lead to the creation of a *schedule* expressed on a *Gantt chart*.

3 Gantt Charts

Named after their inventor, an early 20th century engineer, Gantt charts are a graphical planning and monitoring tool, in which tasks are shown as bars on a timescale. They are a familiar sight, and numerous software applications (including free ones) exist to create and update them.

Days	1	2	3	4	5	6	7
Decorate							
Cabling							
Carpet							
Pack							
Move							
Unpack							
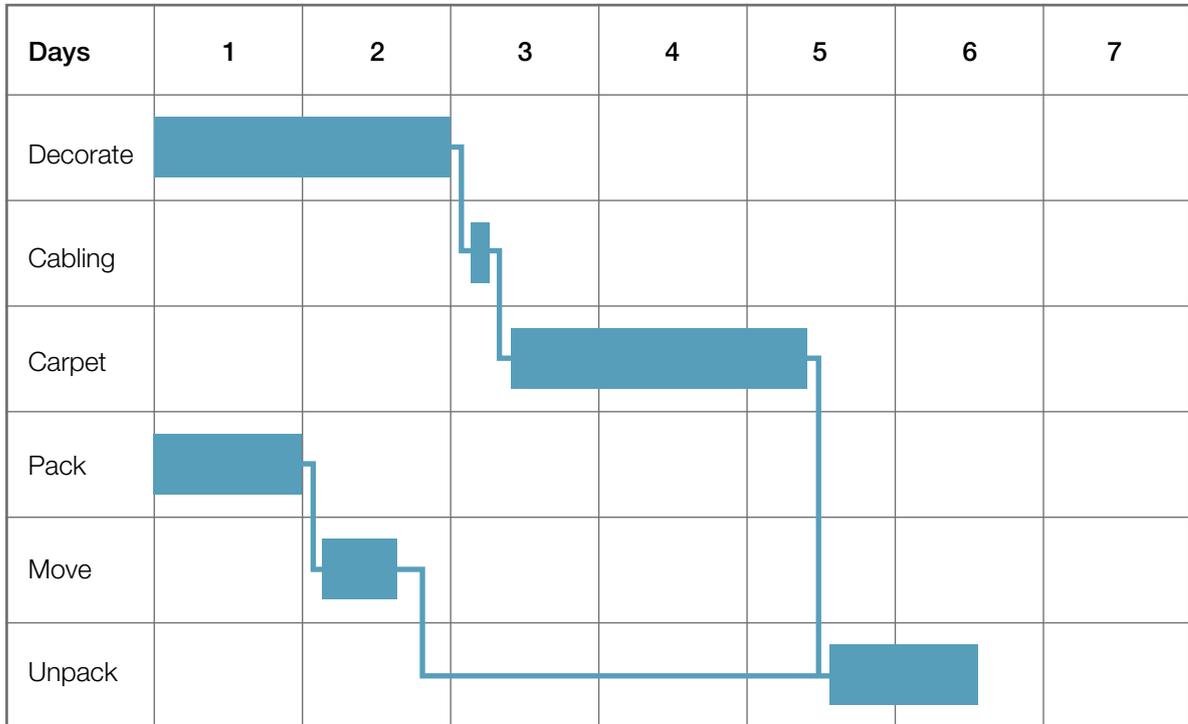
This example shows dependencies, and also tasks which can be achieved in parallel, allowing more flexible but controlled scheduling. In this example, it's clear that packing could start any time between day 1 and day 4, without delaying the overall project.

In real projects, Gantt charts show more detail, such as people responsible for achieving particular tasks, and can take into account the availability of resources, for example it is possible to take account of when individuals are on leave.

Gantt chart pros and cons:

✔ Easy for the team and external people to see project plan & responsibilities
✔ Good tool for coping with contingency: the knock-on effects of change or delay to specific activities can be quickly assessed.
✔ Good way of tracking progress.

✖ Doesn't show costs, which need to be calculated elsewhere (although this can be incorporated in the more sophisticated software).
✖ Can get complex with large projects
✖ Needs redrawing when plans change (hence the benefit of dynamic software)