



**Researchers into
Management**

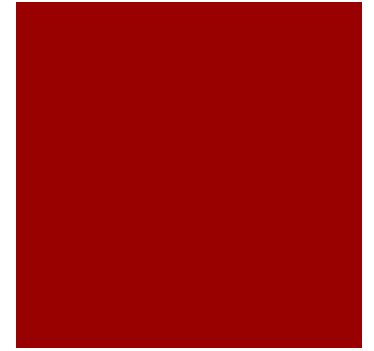
Managing Projects in the organisation

Yvonne McLean
Inkling Training and Coaching

www.inklingtraining.co.uk

What is a project?

- A project is an individual or collaborative enterprise that is carefully planned to achieve a particular aim. (*Oxford Dictionary.*)
- A project is a temporary endeavour undertaken to create a unique product, service, or result. (*Project Management Institute*)
- A project is a temporary organisation that is created for the purpose of delivering one or more business products according to an agreed Business Case. (*PRINCE2*)



Project or Business as Usual?

Project	BAU
Unique	Repetitive
Brings about change	Keeps the business running
Temporary organisation structure	Permanent organisation structure
Defined goal or outcome	Continuation of business
Has a clear start, middle and end	Ongoing, no clear end
Requires planning and / or co-ordination	Could require planning and co-ordination as routine

Projects are about change

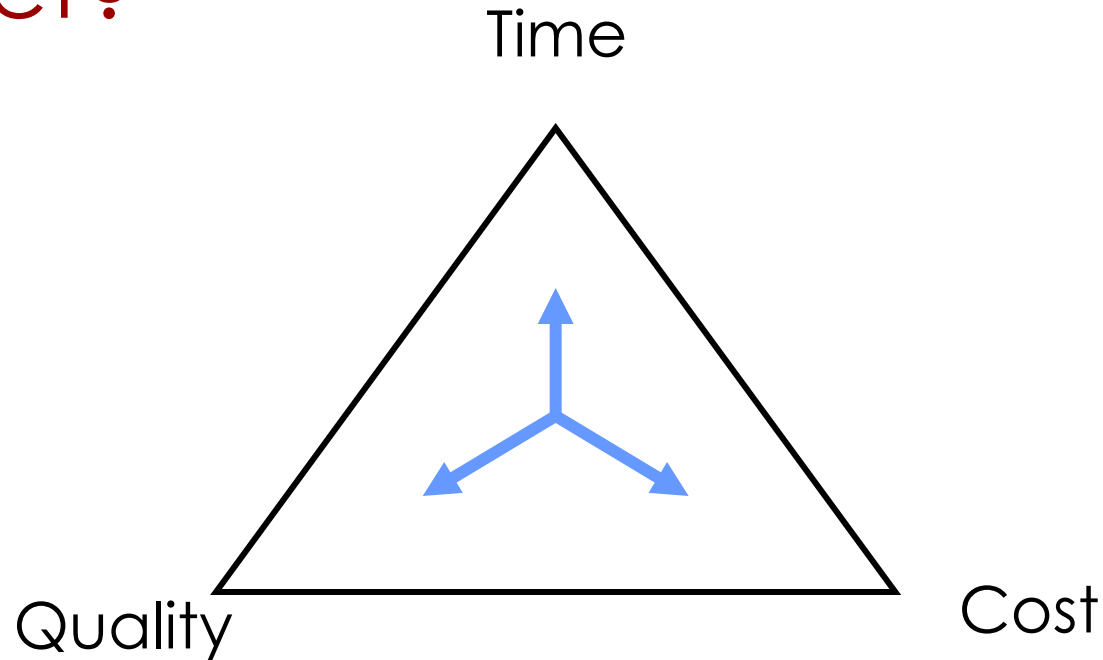
Developing something new

Improving something existing

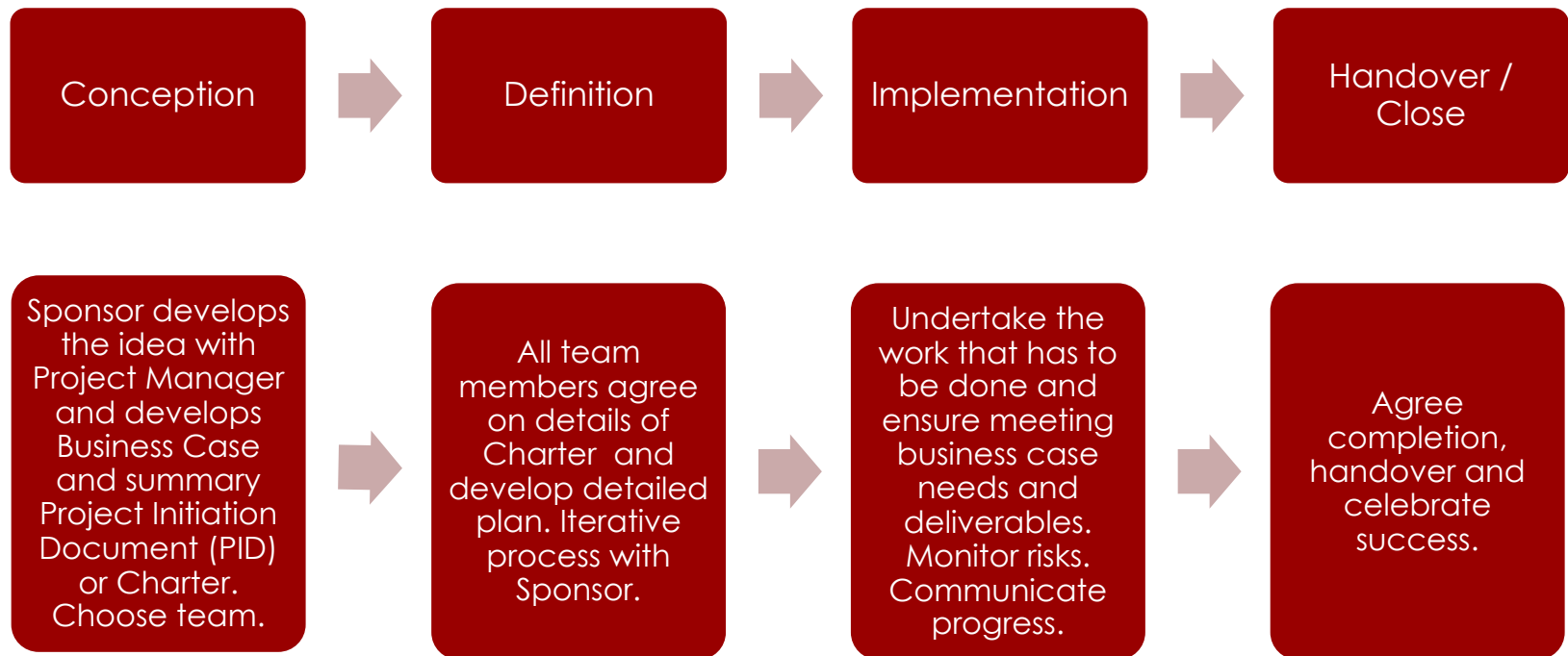
Why Projects Fail

- Poor scheduling
- Over ambitious purpose
- Lack of clarity about what you're trying to do
- Failure to allow enough time to plan properly
- Not aligned with business needs
- Poor leadership
- Unclear lines of authority
- Insufficient resources
- Unclear objectives
- Failure to monitor progress
- Failure to evaluate results and learn from experience
- Failure to close

What is a Successful Project?

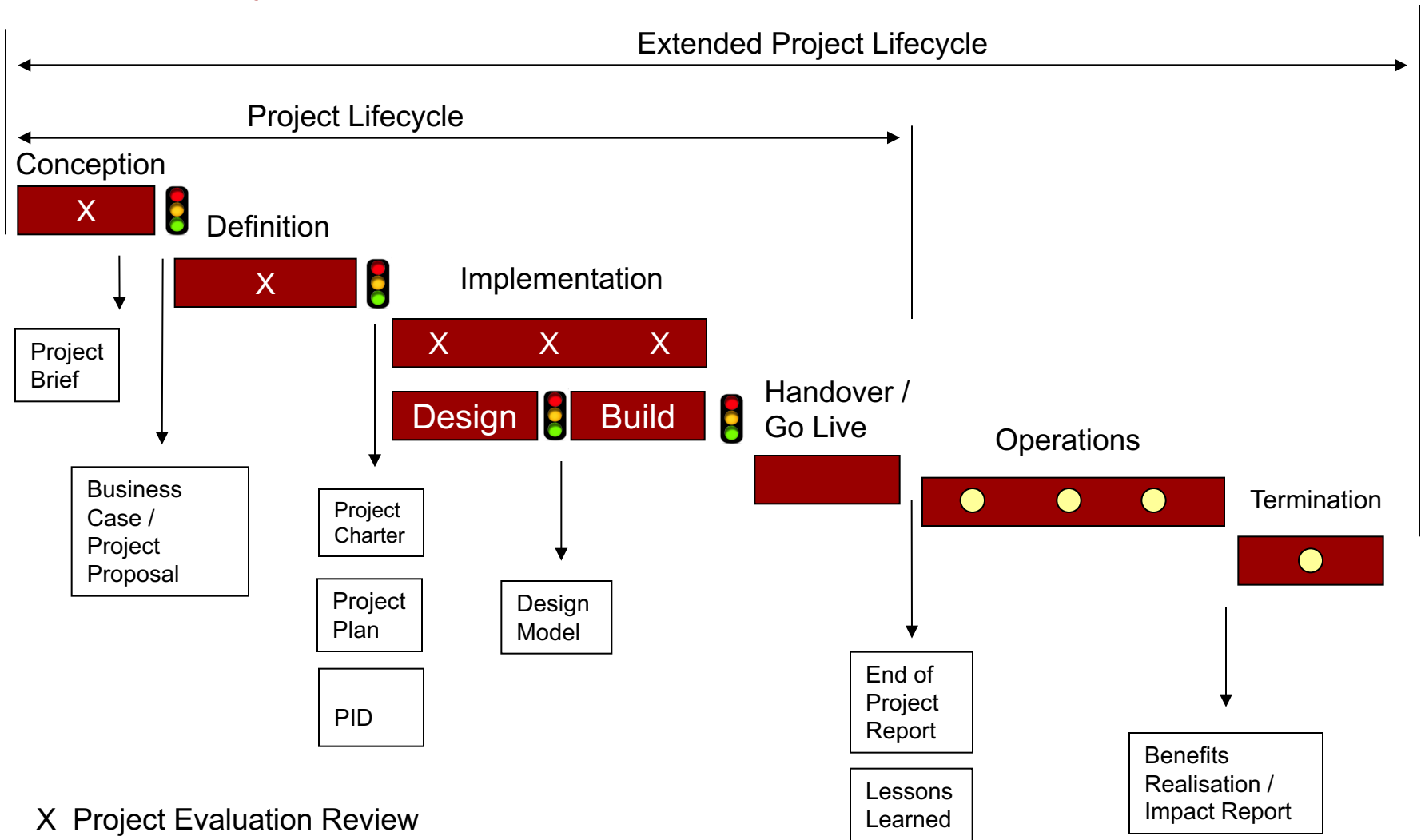


Phases in the lifecycle

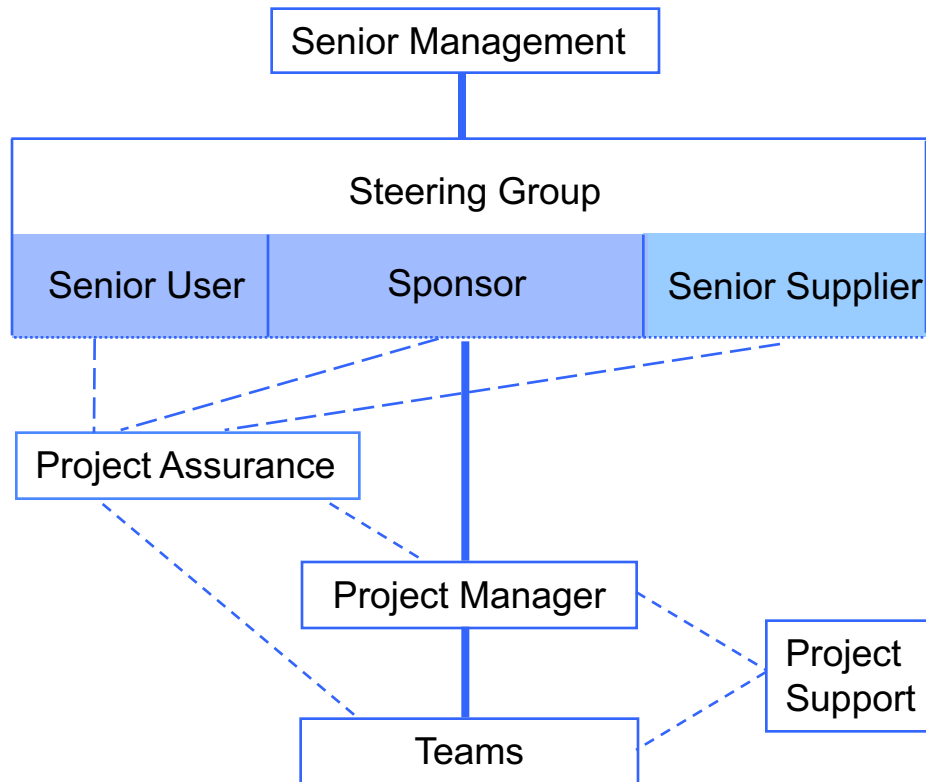




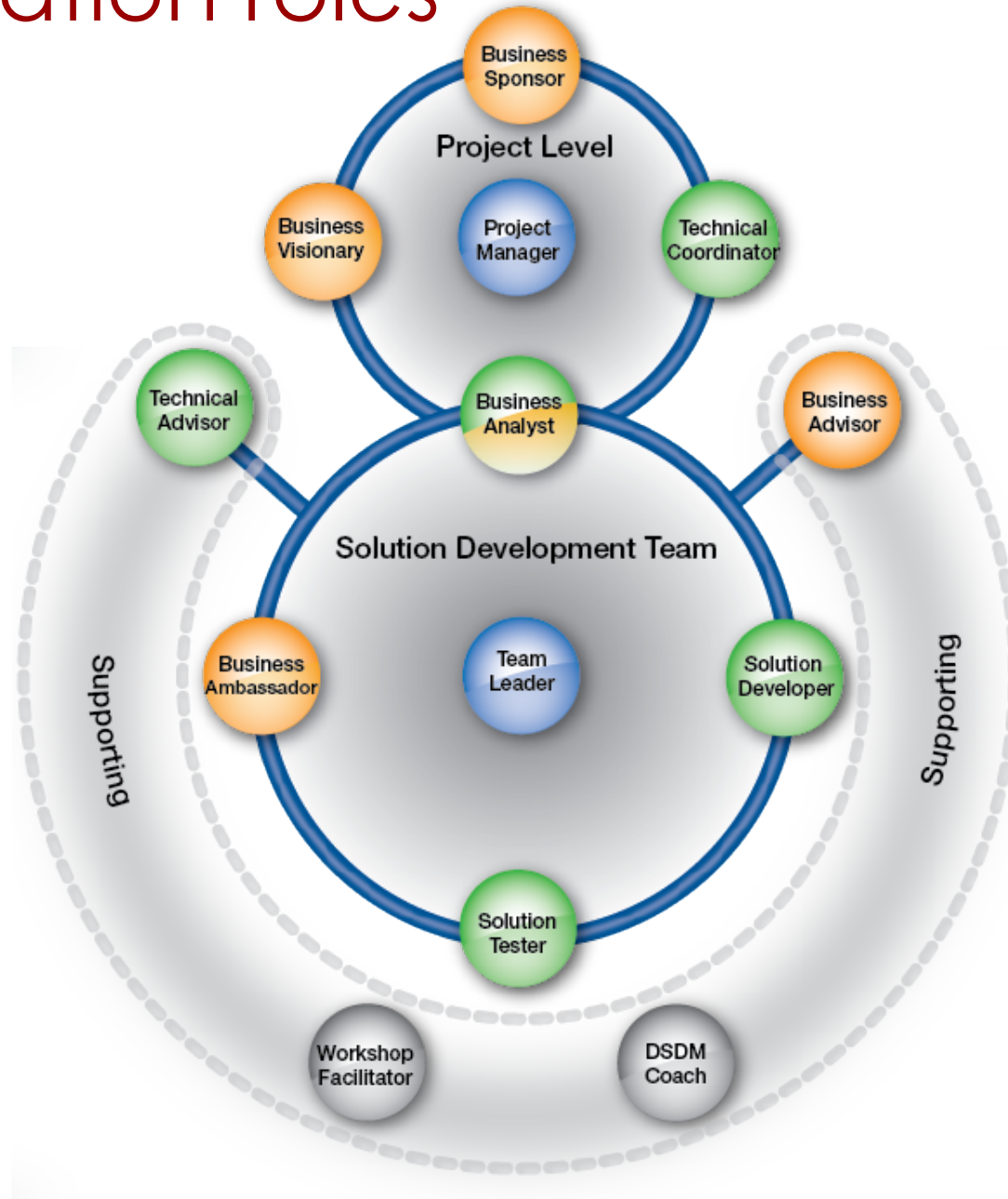
Typical Project Lifecycle



Organisation Roles



Organisation roles



Key milestones

- Concept – Definition
 - Sponsor applies for funding for feasibility
- Authorisation Milestone
 - After Definition
 - Sponsor applies to authorising body for funding etc
- Handover Milestone
 - After Implementation
 - Give the customer the end product
- Shutdown Milestone
 - Signals the end of the project

Sponsor – the role

- Business leader and decision maker
- Primary risk taker
- Authority to work across functional boundaries
- Advocate for the project
- Prepared to commit time
- Experience
- Maintains a continuous dialogue with Project Manager
- Liaises with stakeholders
- Empowered and capable of addressing stakeholder interests
- Accountable for benefits identification and realisation

Project Manager – the person

- Pivotal to the success of the project
- Motivational manager
- Time management skills
- Tenacious
- Organisational skills
- Thrives on change
- Communicate effectively with all project contributors
- Ability to influence and maintain the commitment of the Sponsor and the Stakeholders

Project Manager – the role

- Accountable for the planning and successful delivery of the project
- Builds and effectively leads the team
- Uses resources efficiently to deliver the project
- Ensures effective communications with the Sponsor and Stakeholders
- Coaches team members when necessary
- Ensures team is competent in the use of the project management model and understands their own role in it

Stakeholders

- Either involved in implementing the project or will be impacted by the end result of a project.
- Involvement of Stakeholders at various levels appropriate to their interest and influence is important to ensure the success of the project.

They must:

- Be able to participate in the debate defining the project concept and objectives.
- Be able to identify the benefits that will be achieved in their own area of responsibility that will be achieved through successful completion of the project

Team Members

- Essential component of the project team
- Involved in planning and delivery – accountable for delivering a specific and agreed contribution.
- Gain commitment from other contributors
- Manage their functional and project responsibilities
- Fulfil their role and responsibilities in progressing through the project management model
- Ensure that their contribution to the projects is incorporated into their objectives and their contribution reviewed and acknowledged appropriately
- Understand their role as subject matter experts in bringing the opinions of their “constituent” group

Launching the project

- A kick-start or kick-off meeting is really important to:
 - Communicate the Business Case
 - Emphasise objectives and deliverables
 - Assign responsibilities
 - Agree the Project Charter and Project Initiation Document (PID)
 - Draw up a more detailed project plan or fine tune the existing
- Depending on the size and scale of the project, this can be held at the start, middle or end of the definition phase.

The Project Management Plan

- A series of documents which detail the planning and delivery arrangements. Even on small projects, as a minimum it should include:
 - Business Case
 - Project Charter
 - Gantt chart or schedule
- Can also include the following and more...
 - Risk management plan
 - Health and Safety Plan
 - Configuration Management Plan
 - Communications plan

A Structured approach to planning

- Define Objectives
- Develop the Work Breakdown Structure
- Develop the Organisation Breakdown Structure
- Decide who will undertake which tasks
- Decide on the sequence of tasks (Dependencies)
- Assess task durations
- Calculate the Critical Path and project duration (Network Analysis)
- Carry out a resource analysis
- Resolve any problems of timescale and resource

Tools for a structured approach

- Brainstorming
- Clustering by time or theme
- Work / product / cost breakdown structure
- RACI
- Estimating
- Gantt charts and scheduling

Brainstorming and clustering

- Brainstorming
 - In a group, let everyone have a say systematically
 - Allow people to “pass” if they want to
 - Do not filter or evaluate until the process is complete
 - You can extend the exercise or move it on by writing suggestions on a post it note

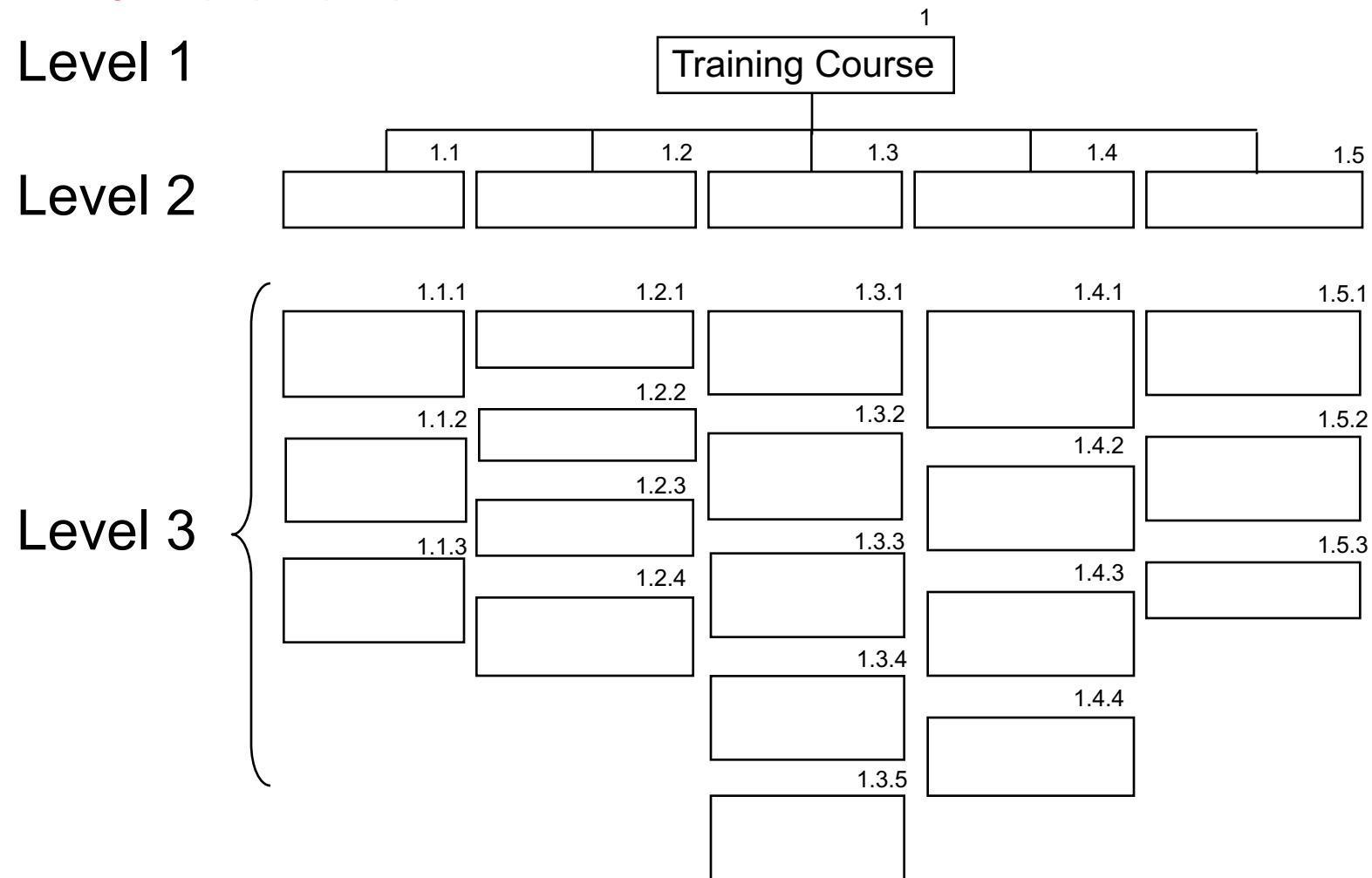
- Clustering ideas chronologically
 - Place one on the wall
 - Take the next and ask “Does this go before or after?”

Creating a Work Breakdown Structure

- Arrange sticky notes in work themes instead of chronology
- Use a verb for each task – it makes them specific and tangible
- Avoid too much detail – makes it unwieldy and sensitive to change
- Avoid getting involved in sequence/dependency – the Work Breakdown Structure is just a structured list of tasks.

Step 2 – Work Breakdown Structure

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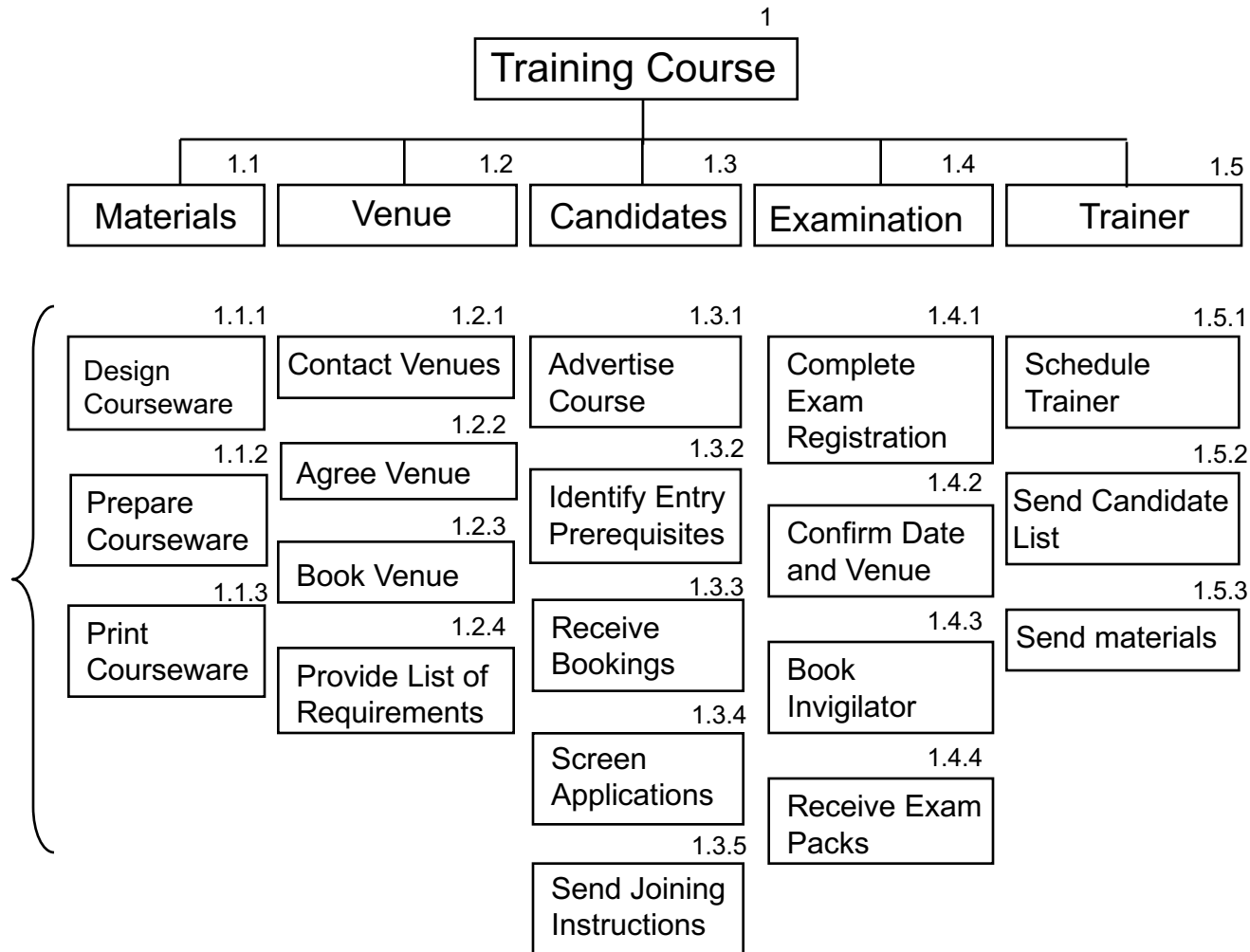
Step 2 – Work Breakdown Structure

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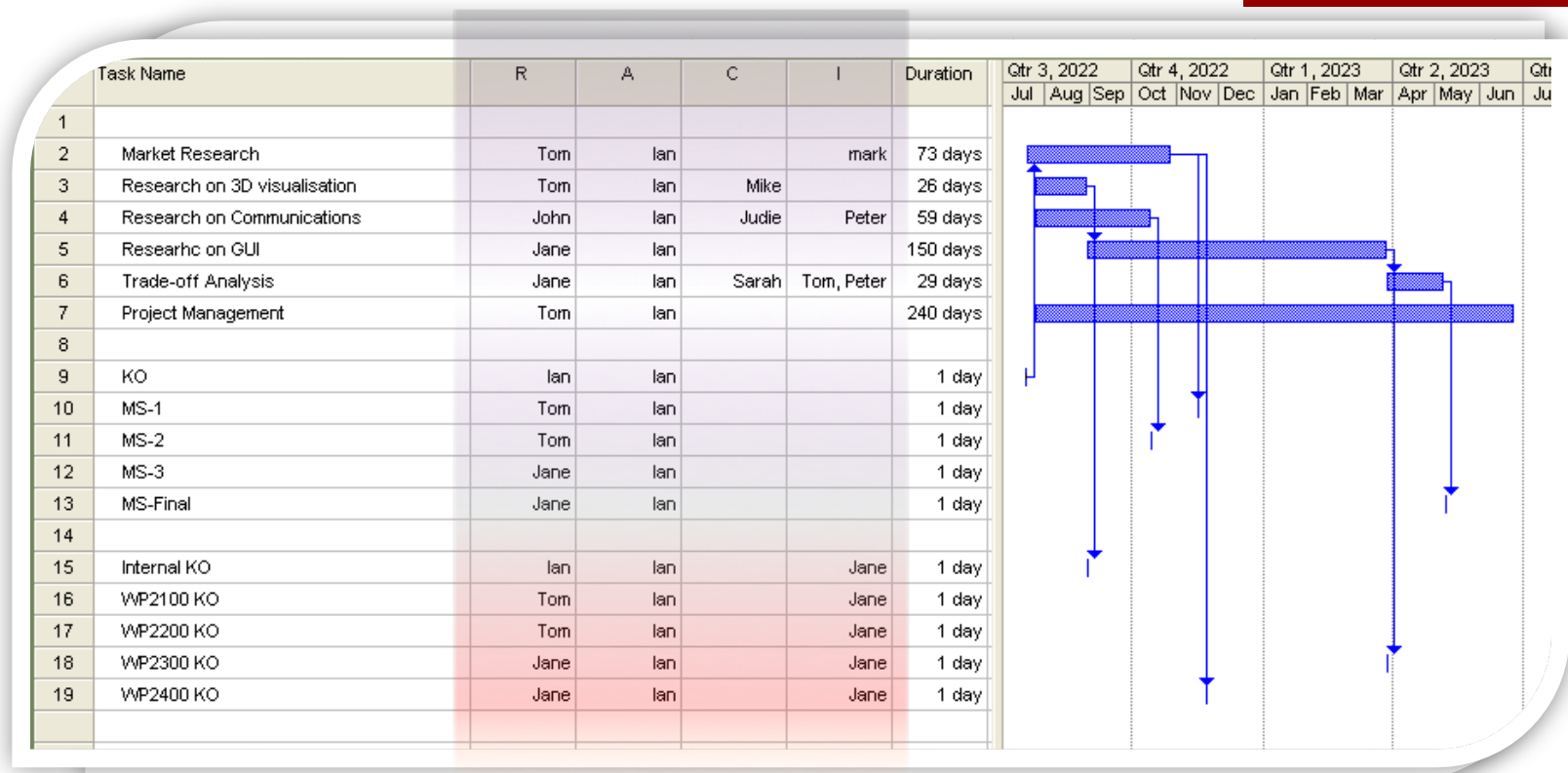
Level 1

Level 2

Level 3

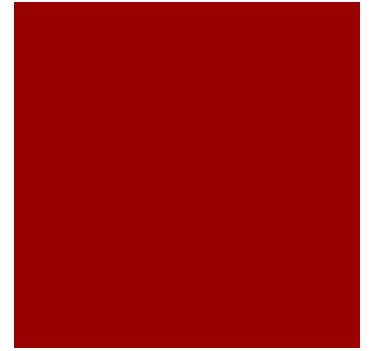


Gantt Chart



Estimating

- Analogous
- Parametric
- Bottom up
- 3 point estimating



Analagous



- Analogous estimating uses a similar past project to estimate the duration or cost of your current project, thus the root of the word: *analogy*.
- Used when there is limited information regarding your current project, an analogous estimate is considered “top-down” and is generally not as accurate as other estimating techniques.
- Because the project manager's, and possibly the team's, experience and judgment are applied to the estimating process, it is considered a combination of *historical information* and *expert judgment*.
- For example, if it cost £7,100 to develop a website a few months ago and you are responsible for developing a new similar website, you estimate it to cost £7,100.

Parametric



- Parametric estimating, a more accurate technique for estimating cost and duration, uses the relationship between variables to calculate the cost or duration.
- This technique also uses historical information to calculate the cost estimates. However, there is a difference between this technique and the analogous estimation technique.
- Parametric Estimation technique uses historical information along with statistical data. It takes variables from the similar project and applies them to the current project. Essentially, a parametric estimate is determined by identifying the unit cost or duration and the number of units required for the project or activity.
- The measurement must be scalable in order to be accurate.
- For example, if it took me two hours to mow my one acre garden last week and this week I'm mowing four acres, I could estimate that it will take eight hours to mow.
- However, if the first one hour was spent transporting my tractor and preparing it to mow, the estimate would need to be scaled appropriately: 1 hour for transporting and then four hours to mow, for a total of five hours.

Example combining Analogous and Parametric



- You are the project manager for the annual Earth Day 5k road race, with three primary components: marketing, registration, and race-day coordination.
- For marketing, there will be 500 flyers printed up at a cost £0.20 each. It took two weeks for the flyers to be printed for last year event, so you estimate two weeks for the printing of the brochures for this event.
- Last year it took one week to design the on-line registration form and the cost to host the registration website was £850.00 You estimate the same this year.
- There will be four people used to coordinate the race. Each resource will be paid £25 per hour and they will be working an estimated seven hours, based on the race last year.
- Marketing Cost: £100 for brochures (parametric estimating $500 \times £0.20$) Duration: two weeks (analogous)
- Registration Cost: £850 (analogous) Duration: one week (analogous)
- Coordination Cost: £700 (parametric estimating - $4 \times £25 \times 7$) Duration: 7 hours (analogous)

Summary of Analagous and Parametric



- **Similarities** between analogous and parametric estimating:
 - Can be used for both duration and cost estimating
 - Essentially a combination of historical information (leveraging past projects/activities) and expert judgment
- **Differences** between analogous and parametric estimating:
 - Analogous is considered top-down and is less accurate than parametric.
 - Analogous estimating uses an “analogy” – comparing a past similar project to your current project.
- Parametric is more accurate, specifically when the underlying data is scalable. Parametric uses a relationship between variables (a unit cost/duration and the number of units) to develop the estimate.

Bottom-Up Estimating



- Bottom-up estimating is a process of estimating individual schedule activities or costs and then aggregating these together to come up with a total estimate for the work package.
- Every schedule activity is estimated individually and all individual estimates are added together, to come up with a total. The accuracy of these estimates is proportional to the accuracy of the estimates at the schedule activity level which in turn depend on the size, complexity and detailed understanding of the schedule activity.

Three-Point Estimating



- This technique is used for cost and duration. Instead of starting with one estimate, three estimates are determined and then their average is taken to reduce the uncertainties, risks and biases. There are two main types of 3 point estimating – Mean and PERT (Project Evaluation Review Technique)
- The three points used are as follows:
 - **Optimistic (O):** This considers best case and everything goes as well as it possibly could.
 - **Pessimistic (P):** This considers the worst case and it assumes that almost everything goes wrong.
 - **Most Likely (L):** This considers everything goes as planned.
- Average or mean 3 point formula:
 - $E = (O + L + P) / 3$
- PERT formula:
 - $E = (O + 4L + P) / 6$

Reporting Progress

- Exception Report (outside tolerances)
- Checkpoint Reporting (to PM from teams)
- Highlight Report (to Sponsor and Steering Group)
- End Phase Report
- End Project Report

Reporting Progress

Red, Amber, Green

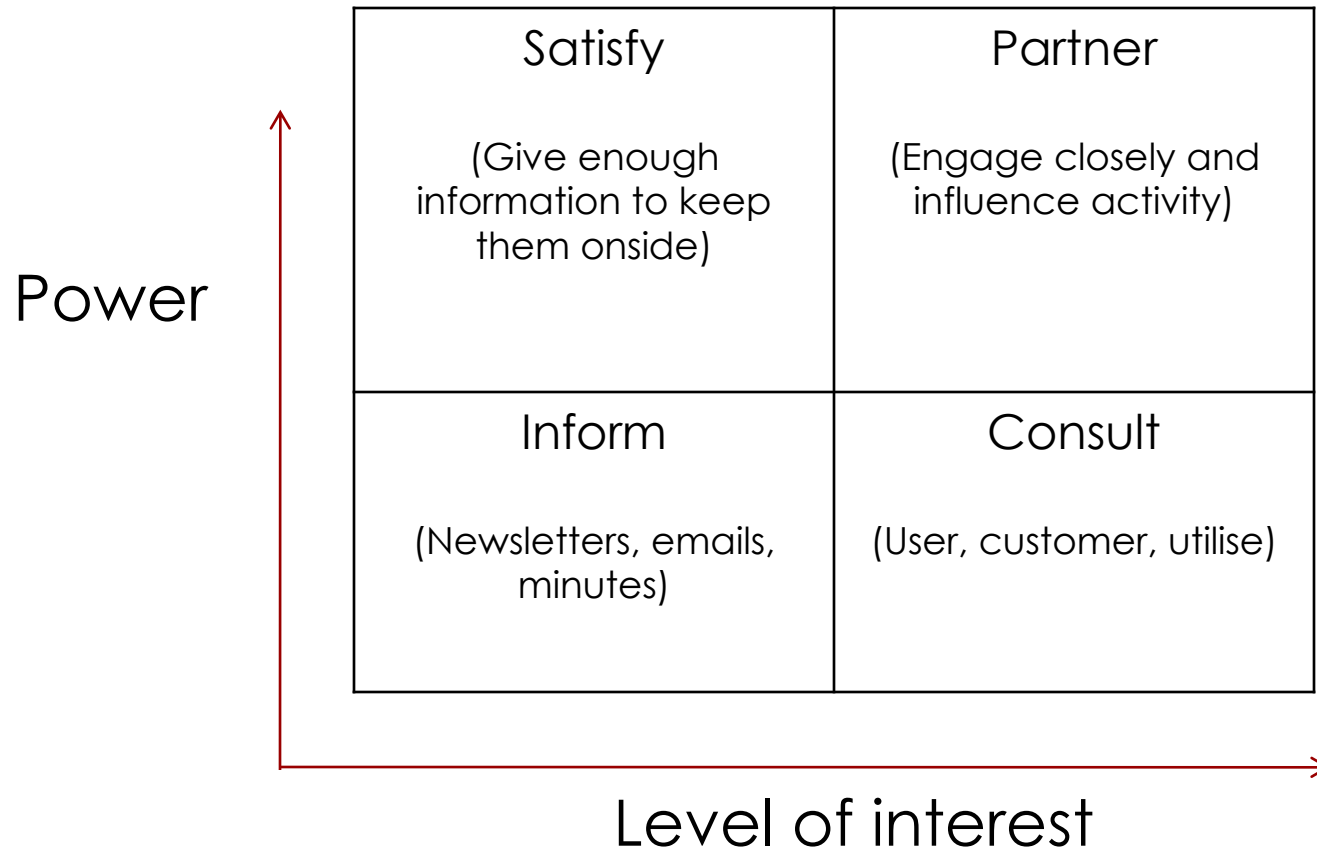
Task	Status	Comment
Task 1	Green	Green = target achieved or on track for successful achievement.
Task 2	Amber	Amber = target at risk of not being met. Write down what the issue is and what action is being taken.
Task 3	Red	Red = target not met or certain not to be met if at a point in the future. Write down what the issue is, what action is being taken and if target needs to be re-evaluated.

Reporting progress

Actual vs planned

Target	Actual	Planned	Variance (+/-)	Comment
Target 1 Eg Number of staff trained in new procedure by week 35	37	50	-13 or - 26%	Good for number based targets.
Target 2				Can decide on a tolerance eg up to 5% before you need to take remedial action.
Target 3				

Stakeholder Analysis



Communication Plan

- Derived from stakeholder analysis
- Typical content
 - Stakeholder list and contact details
 - Information required by each stakeholder (group)
 - Source of information
 - Format of information
 - Frequency of information
 - Method of distribution
- Don't forget to include the project team.

Dealing with risk



Risk management options:

- Prevention - stop it from happening altogether
- Contingency - if it happens, have a back up plan
- Mitigate - reduce the risk
- Transfer - give the risk to someone else
- Acceptance – monitor but don't act

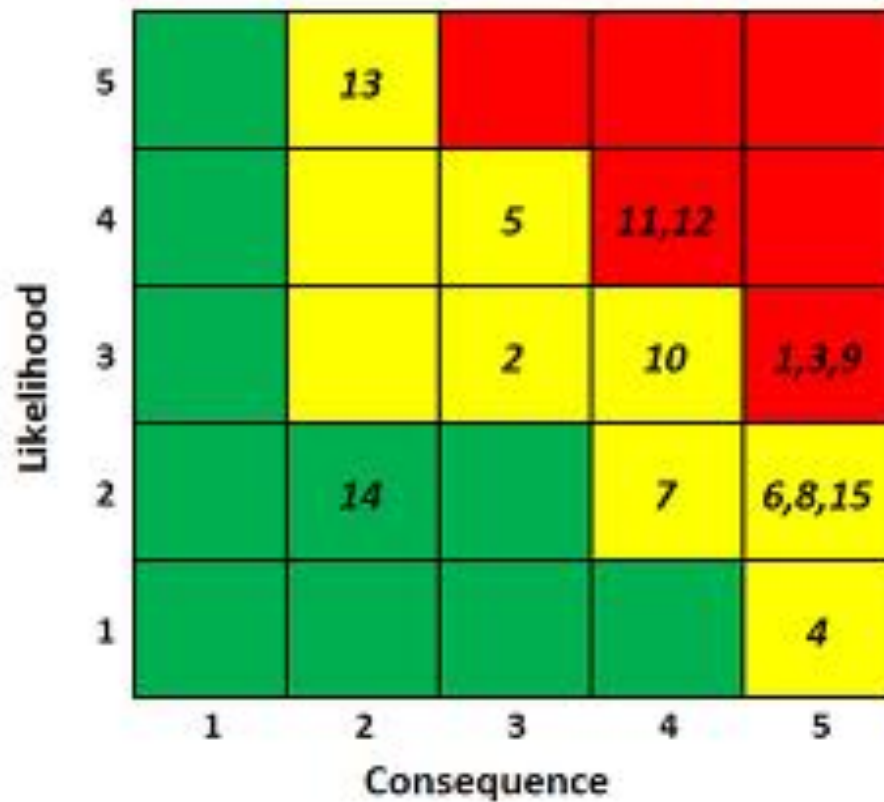
A risk Management Process

- 1 Identify
- 2 Analyse impact / likelihood / proximity
- 3 Create a log and action plan
- 4 Monitor and control

Useful tools for identifying risk

- Brainstorming
- Diagramming techniques
 - Cause and effect diagrams
 - System or process flow charts
 - Pre-determined headings eg: people, places, processes, equipment, internal, external
- SWOT analysis
- Expert judgement

Risk Analysis



SWOT analysis



Risk Definitions

- A risk
 - is an uncertain event or set of events that, should it occur, will have an effect on the achievement of objectives
- A threat
 - is an uncertain event that could have a negative impact on objectives
- An opportunity
 - is an uncertain event that could have a favourable impact on objectives



Quality Control

- The means of ensuring that the outputs of a project meet the quality criteria specified for them
- Examining outputs to determine that they meet requirements
- Techniques include:
 - Quality Reviews
 - Visual Inspections
 - User Acceptance Testing
 - Walk Through
 - Prototyping or Piloting

Closing the Project

- Requires a procedure to define completion
- Close-out is the same as commissioning or putting to work. It can only happen when:
 - The deliverable have been submitted
 - The objectives have been achieved
 - The customer has accepted the work
- A close-out report should include an update of the cost, time and performance data
- Remember to celebrate success!!

Project Evaluation Review

- Main aims:
 - Evaluate the processes being used
 - Establish any lessons learned and actions arising
 - Identify concerns and agree corrective action
 - Establish likely technical success of the project
 - Validate progress against time, cost, quality, scope and resources
 - Consider stakeholder relationships and perceptions

Benefits Realisation Review

- Undertaken some time after the products are in use
- Establish whether
 - The benefits have been realised (or not)
 - Any unexpected benefits have been realised
 - Any problems have been caused by the new products
- Put in place corrective action if benefits not realised