



Cause and Effect

What

Cause and Effect diagrams (Ishikawa or Fishbone), help identify, explore and display the possible causes related to a problem by using a structured brainstorm. The tool can also be used to collate and structure a drill down of information around a particular issue. This can help people to offload pent up concerns and issues early in a project, enabling a more focussed and constructive approach thereafter.

Why

Cause and Effect Diagrams are used to;

- Provide a structured way to capture the causes.
- Focus on the cause not the symptom.
- Push you to consider more than just the 'obvious' ones.
- Involve the team to develop potential causes.
- Enable the team to assess possible causes and prioritise where to focus attention.

This method is used to brainstorm causes of a single effect. Where several effects occur multiple diagrams can be produced and then transferred onto a 'Y' to 'X' Matrix.

How

1. Decide the problem or 'Effect' you are considering.
2. Brainstorm possible causes with the team, including all available relevant experts
3. Capture the causes using the 'fishbone' structure i.e. Effect on the right and each cause being grouped on a 'bone' under one of the headings; People, Environment, Materials, Methods and Equipment (PEMME). Other headings may be used if more appropriate.
4. Where causes are large or complex it may require further discussion to break down into sub-causes. Can use "5 Whys" technique to dig deeper into underlying issues.
5. Each cause can be 'rated' and a score entered next to it to give an initial prioritisation. The score could be from a voting process (e.g. nominal group technique).
6. Collect evidence to test validity of highest scoring items.

The following image demonstrates a simple example;

