# Root Cause Analysis and Structured Decision Techniques

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Manama (Bahrain)



# Root Cause Analysis and Structured Decision Techniques

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Root cause analysis and structured decision techniques are disciplined ways of finding out why a workplace problem happens and of choosing a response on stated criteria rather than habit or rank. This 1-week course is for managers and specialists in any organisation, and each delegate finishes it with a problem-and-decision brief on a real issue from their own work. The subject is taught by Blackbird Training Centre.

## Introduction

The course rests on three established methods. The Kepner-Tregoe method is a set of rational processes for problem analysis, decision analysis and potential problem analysis. The Ishikawa diagram, also called a fishbone or cause-and-effect diagram, groups the possible causes of an effect into categories. The Paul-Elder framework sets out the elements of reasoning and the intellectual standards used to judge them. The level is practitioner: delegates use each tool on cases. Teaching is by case study, with cases drawn from manufacturing, healthcare and logistics.

## Course Objectives

- Define a problem as a deviation described by what, where, when and extent, so that a team investigates one agreed issue.
- Distinguish a symptom from a root cause and from a contributing cause, and aim corrective action at the right level.
- Compare the 5 Whys technique with the Ishikawa diagram and select the one that suits a single-chain or a multi-cause problem.
- Interpret data and claims against the clarity, accuracy, relevance and logic standards before acting on them.
- Apply weighted-criteria decision analysis that separates mandatory requirements from desirable ones when ranking options.
- Justify a recommended decision to colleagues with its evidence, its risks and the alternatives that were set aside.



## Target Audience

- Team and section leaders who own recurring operational faults and must decide which cause to treat first.
- Quality, operations and service improvement specialists who lead investigations and must judge when evidence confirms a cause.
- Project and process owners who weigh competing proposals and must choose the one that meets requirements within budget and time.
- Analysts who prepare recommendations for management and must decide which data and assumptions can carry a conclusion.
- Supervisors in finance, human resources and procurement who handle exceptions and must decide whether a case needs a quick fix or a redesign.

## Course Outline

### Day 1: Defining Problems and Testing Reasoning

- Problem Statement: Describing a Deviation by What, Where, When and Extent
- Paul-Elder Elements of Reasoning: Purpose, Question, Information, Inference and Assumptions
- Fact vs Inference: Separating Observed Evidence From Conclusions Drawn About It
- Intellectual Standards: Clarity, Accuracy, Relevance and Logic Applied to Workplace Claims
- Cognitive Biases: How Anchoring and Confirmation Bias Distort Problem Definition

### Day 2: Finding Root Causes With Structured Tools

- Symptom vs Root Cause: Telling the Visible Effect From Its Underlying Source
- 5 Whys Technique: Tracing a Single Causal Chain Back to Its Origin
- Ishikawa Diagram: Grouping Possible Causes Under People, Method, Machine and Material
- Kepner-Tregoe Problem Analysis: Is and Is-Not Comparison to Narrow Likely Causes
- Pareto Analysis: Ranking Causes by Frequency to Focus Investigation Effort

### Day 3: Generating and Comparing Options

- Divergent vs Convergent Thinking: When to Widen and When to Narrow Options
- Reverse Brainstorming: Asking How to Cause the Problem to Find Remedies
- Musts vs Wants: Separating Mandatory Requirements From Desirable Decision Criteria
- Criteria Weighting: Assigning Relative Importance Before Any Option Is Scored
- Pros-Cons-Fixes Review: Testing Each Shortlisted Option for Practical Weaknesses

### Day 4: Choosing Under Risk and Uncertainty

- Risk vs Uncertainty: Known Probabilities Compared With Outcomes That Cannot Be Estimated
- Kepner-Tregoe Decision Analysis: Scoring Alternatives Against Weighted Objectives
- Decision Tree: Mapping Choices, Chance Events and Expected Values
- Potential Problem Analysis: Anticipating What Could Go Wrong With a Chosen Option
- Consensus vs Delegated Decision: Choosing How a Group Reaches Agreement



## Day 5: Applying the Methods to a Workplace Case

- Case Problem Definition: Writing the Problem Statement for a Delegate's Own Issue
- Cause Confirmation: Using Is and Is-Not Evidence to Verify the Likely Cause
- Option Scoring: Running Weighted Decision Analysis on the Case Alternatives
- Corrective vs Preventive Action: Removing the Current Fault and Stopping Its Return
- Problem-and-Decision Brief: Finalising Evidence, Recommendation and Risks for Review

## Skills You Will Gain

- Problem statement writing
- Root cause analysis
- Ishikawa diagramming
- Is and Is-Not analysis
- Weighted criteria scoring
- Decision tree analysis
- Potential problem analysis
- Bias recognition in reasoning

## Why Attend This Course

- From fixing the same fault every month to tracing it to a cause that evidence supports.
- From taking the first workable option to ranking several against criteria agreed in advance.
- From offering opinions in meetings to setting out reasoning that colleagues can test.
- From scattered notes on a workplace issue to a finished problem-and-decision brief ready for management review.

## Conclusion

Structured problem solving is the practice of proving a cause before treating it and of stating criteria before choosing. The course makes three distinctions clear: a symptom against a root cause, a must against a want, and risk against uncertainty. It suits managers and specialists in any organisation who already deal with problems and decisions and now need a repeatable method at practitioner level; senior leaders looking for strategy formulation would be better served by a different course.

## Course FAQs

### What are root cause analysis and structured decision techniques?

They are methods for proving why a problem occurs and for choosing a response against stated criteria. Root cause analysis uses tools such as the Ishikawa diagram and the 5 Whys; decision techniques use weighted scoring, decision trees and a review of what could go wrong.



## What is the difference between a symptom and a root cause in root cause analysis?

A symptom is the effect people notice, such as late deliveries; a root cause is the underlying condition that, once removed, stops the effect returning. Treating a symptom brings short relief, while removing the root cause prevents the problem from recurring.

## Which method does the root cause analysis and decision techniques course follow?

It follows the Kepner-Tregoe method for problem analysis, decision analysis and potential problem analysis, supported by the Ishikawa diagram, the 5 Whys and the Paul-Elder framework for testing the quality of reasoning.

## Is the root cause analysis and decision techniques course right for a quality specialist?

Yes. A quality specialist who leads investigations uses the Is and Is-Not comparison, Pareto analysis and the split between corrective and preventive action directly, and the decision tools help when choosing which improvement to fund first.

## What does a delegate produce in the root cause analysis and decision techniques course?

Each delegate produces a problem-and-decision brief on a real issue from their own work: a problem statement, the evidence for the likely cause, scored options, a recommended choice and the risks attached to it.

