



## Systems Thinking in Analysing Problems Training

### Description

#### Introduction

Systems Thinking was originally developed in the '50s & '60s by the then largest UK Company ICI and developed by others through exploring different perspectives such as purposeful systems and soft systems. The Open University and Lancaster University amongst others. There is a worldwide communication of users through LinkedIn.

It is useful in policy or strategy analysis, to ensure as far as possible that the outcomes are as intended. It is excellent in the analysis of complex socio-technical problems. It has marked advantages over any other analysis method where there is complexity and interconnectedness of the entities involved. It can be used to solve problems that traditional techniques are unable to complete and it can also highlight hidden issues that remain invisible to many forms of problem analysis.

This training session covers many of the techniques and tools in this field and provides thorough understanding of a flexible methodology. The techniques are normally applied to:

- Identify the real issues in complex interconnected situations
- Examine the possible solutions
- Focus on the key system of a potential solution
- Evaluate the best course of action
- Strategic problem solving
- e-Business process issues and human (soft) issues

#### objectives

- Understand the language of Systems Thinking
- Look at problems from the perspectives of multiple stakeholders
- Explore some analytical tools and techniques
- Learn how to use one methodology of approach
- Practice techniques that are used in this methodology
- Be able to judge which may be of most use in specific circumstances

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- Participate in groups exploring familiar and new problems
  - Evaluate potential actions against organisational requirements

## Contents

### Day One

#### Key Principles

- What is a system
- Problem-solving techniques discussion
- Difficulties and Messes
- Recognising complex systems
- Introduction to systems thinking
- Worldview and Perspectives
- Stakeholder analysis
- Systematic and Systemic
- The 2x2 Matrix
- Introduction to a Methodology

### Day Two

#### Diagramming Practice – Sensing

- The Power of Diagrams
- Introduction to Diagramming
- Venn Diagrams
- Spray Diagrams
- Mind Maps
- Hard and soft issues
- Soft systems methodology
- Rich pictures
- Systems Diagrams
- Challenging assumptions and objectives

### Day Three

#### Analysis Methodology – Understanding

- Causal Diagrams
  - Influence Diagrams
  - Multiple Cause Diagrams
- Deciding upon a system of interest
- Drawing sign graphs
- Analysing causal diagrams
- Feedback loops and system archetypes
- Criteria, measures and indicators
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**Key performance indicators:**

- Cycle time
- First pass yield/First time OK
- On-time delivery
- Interpreting measures
- Systems thinking and process mapping
- Root cause analysis

**Day Four****Problem Resolution – Deciding & Acting**

- Overview of Modelling
- Setting system boundaries
- Evaluating Potential Actions
- Decision-making tools:
  - Multiple Criteria Analysis
  - 5 Ws & 1 H
  - SWOT
  - STEP/SLEPT/PETSTLE
  - Porter's Five Forces
  - CDAM
  - Multivoting
  - Pariwise ranking
  - Force field analysis
- Reality Checks for Practicality
- Project managing change
- influence and persuasion

**Day Five****Case Studies – Putting theory into practice**

- Applying the methodology to real problems
- Presentations
- Evaluation and discussion
- Commitment to action
- Agree next steps