

# Making difficult decisions by using soft systems concepts

Jose Manuel Linares

## Audience

The audience of this report is mainly for managers, technologists, psychologists or for people in organisations who would like to grasp on how to make a difficult decision using systems concepts.

This brief report will help the reader address some issues relevant in the process of making difficult decisions. I will outline some techniques used in systems thinking and use them with some available examples. Soft systems and hard systems are used together to solve problems, but in this document, I will focus more on soft systems which generally deals with human issues or softer issues. The key element in sorting out a problem is to take into account all the information that is given to you.

## Using soft systems methodology.

In systems terminology, a mess is defined as a mound of components that are not connected together. You might have for example a mess in your head where a problem is not clearly defined. So the first step is to sort this out the mess and structure it in a way that is visually more cohesive.

A technique to lay out all the problems on paper is to draw the issues you have. For example, drawing a hot headed boss who is an ass and full of hot air can be drawn comically as a man in a suit and draw a farting butt as his face. This drawing represents one problem theme. Draw out all the problems preferably on a large sheet of paper.

You will now have a clearer picture of all your problem themes which makes it easier to target and solve. After you have drawn all your problem themes, select one from all your drawings and focus on that theme. You will now need what is called an **agreed objective or root definition** that will meet the criteria for all your problem themes which is covered next.

## Defining a root definition

We now introduce you to the following acronym:  
**CATWOE**

These letters stand for

**Customers:** Who benefits from the system?

**Actors:** Who are involved in this problem?

**Transformation:** What do you hope to accomplish?

**Worldview:** Take into account what is the overall problem?

**Owners:** Who owns the system?

**Environment:** What is the environmental target?

Let us suppose that we look at into a problem with staff management at a local hospital. One of the problems highlighted was that of staffing levels. So in the CATWOE above, we list it as follows:

C: Patients

A: Staff

T: Delivering an A/E service

W: A satisfying place to work

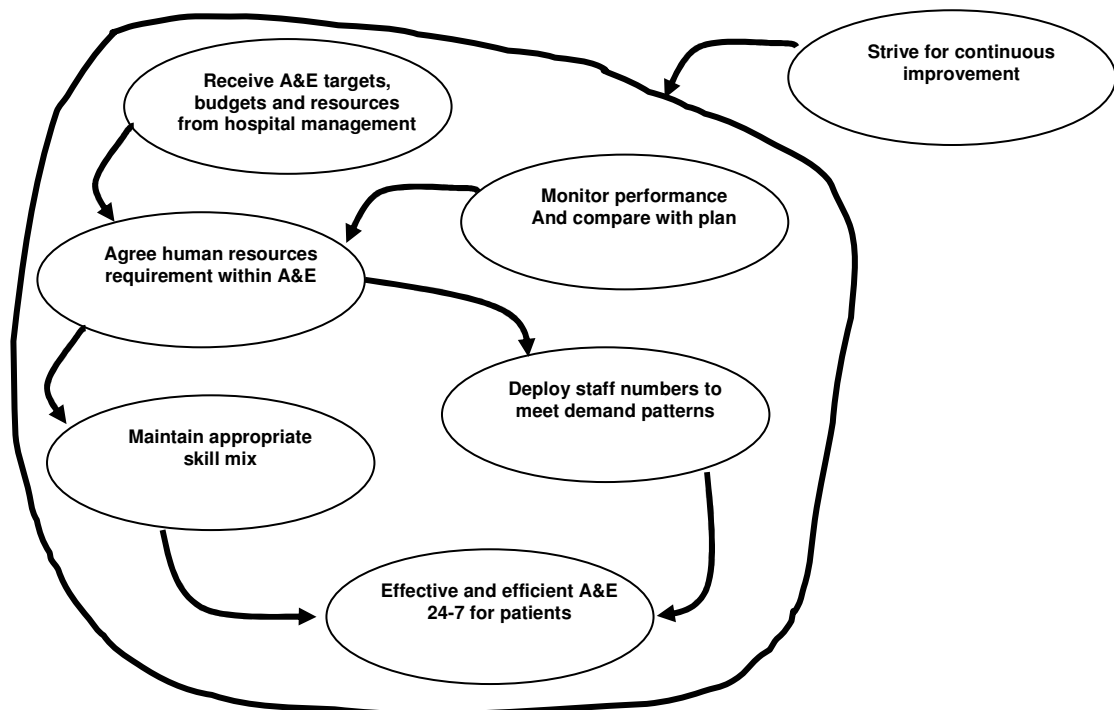
O: Hospital management.

E: Needs to be running 24/7.

So our root definition would be:

**A management system to operate an A&E unit with appropriate levels of staff in order to provide an efficient and effective 24/7 service for the patients of this area.**

After defining CATWOE, we draw up a conceptual model of the situation. The following conceptual model was made with a team of systems analysts, so if you have team of people to think over a problem, the better.



The blob that forms a boundary is a system and anything outside is considered to be outside the system. Inside the system, we have 6 blobs or sub systems which are interconnected and define a solution. The headings below are matched with a blob in the diagram above.

Maintain Appropriate Skill Mix

- **Establish a process to determine the required number of staff with the appropriate skills for the units. Then:**
  - Review where the units is at this time
  - Examine how that matches the optimum design
  - Design and implement a process to address differences
- **Explore options to increase the flexibility of staff capabilities eg up-skilling nurses and ambulance crews**
- **Get hospital management to discuss with appropriate partners eg NHS Direct and local GP's, options for Cat 5 patients outwith the unit**

Meet Demand patterns

- **Establish appropriate staff levels for the unit at demand levels**
  - peak
  - normal
  - low
- **Explore options for increasing staff flexibility in order to meet demand. Options may include:**
  - More permanent part-time staff
  - Changing contracts to allow for flexible hours
  - Changing shift pattern rules

Effective HR planning

- **Ensure that A&E has a human resource management plan that will meet its operational needs and the targets and resources it has**
- **Establish the financial costs of the current staff retention and recruitment problems, thus identifying the benefits from successful change**

From data to information to Management

- **Create an information system that enables effective management of the A&E unit. This to address**
  - What - information is required
  - Why - it will help improve performance
  - How - it is to be gathered, processed and distributed
- **Review data collection and processing processes to address perceived weaknesses**
- **Implement staff attitude survey on a 6 month rolling basis**

- **Implement a staff appraisal processes with a particular focus on their personal development potential**

Engaging hospital management

- **Establish a process that informs hospital management of A&E's resource requirements based on relevant and accurate information**

Continuous Improvement

- **Establish a continuous improvement programme that will ensure the unit's staff and management are engaged in processes that will:**
  - **Improve outcomes**
  - **help make the unit a better place to work**

In a nutshell

Soft systems methodology will give part of a solution to a defined problem. After following the steps as defined in the report, problem areas were defined and zoomed in from a "helicopter view" and zoom out to observe the scenario again. This process is known as diverging and converging. Once all areas are known, one problem area is focused at a time and a conceptual model is drawn to solve the problem by defining CATWOE. A conceptual model is drawn to model the new system and focus on each sub system area where solutions are thought out for implementation.

To solve problems that are associated with models and hard data, hard systems methodologies are used to generate a result.