

## SOFT SYSTEMS METHODOLOGY

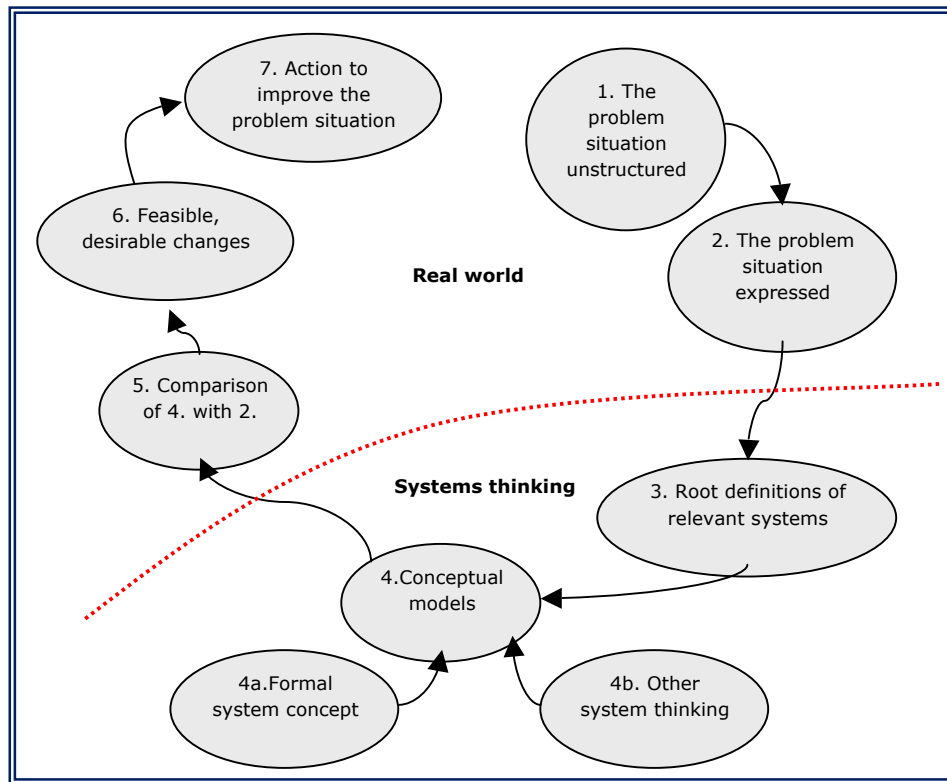
Peter Checkland developed soft Systems Methodology (SSM) in the late 60's at the University of Lancaster in the UK. Originally it was seen as a modeling tool, but in later years it has been seen increasingly as a learning and meaning development tool. Although it develops models, the models are not supposed to represent the "real world", but by using systems rules and principles allow you to structure your *thinking about* the real world. The models are neither descriptive nor normative, though they may carry elements of both.

One of the interesting things about SSM is that it *constrains* your thinking in order for you to expand your thinking. Thus blowing away the idea that system thinking is always expansive.

Like many other systems approaches the heart of SSM is a comparison between the world as it is, and some models of the world as it might be. Out of this comparison arise a better understanding of the world ("research"), and some ideas for improvement ("action").

In classic SSM the researchers begin with a real-world problem (or perhaps "situation" is a better word). They study the situation in a fairly unstructured way. Following this, they develop some models of that situation. The particular strength of SSM for evaluators is that it can be used to untangle the evaluative lessons from programs with multiple goals and multiple perspectives on these goals. It does so by developing specific perspectives on the program, rigorously constructs some models based on these perspectives and then compares these with real life.

The classic SSM inquiry has seven stages. Some of them address the "real" world, and some of them – perhaps the most important parts – address a conceptual world.



*An activity sequence diagram of the SS-method to problem solving*

### STAGES OF THE SSM:

#### Stage1: The problem situation unstructured:

- ◆ **Problem situation** rather than 'problem': 'unstructured' to indicate that you are going to look at this situation in as open a way as possible.
- ◆ The first task, therefore, is to assemble a representation or picture of this situation that is **rich** in both quantitative or factual, and qualitative and subjective information (i.e. a *rich picture*).

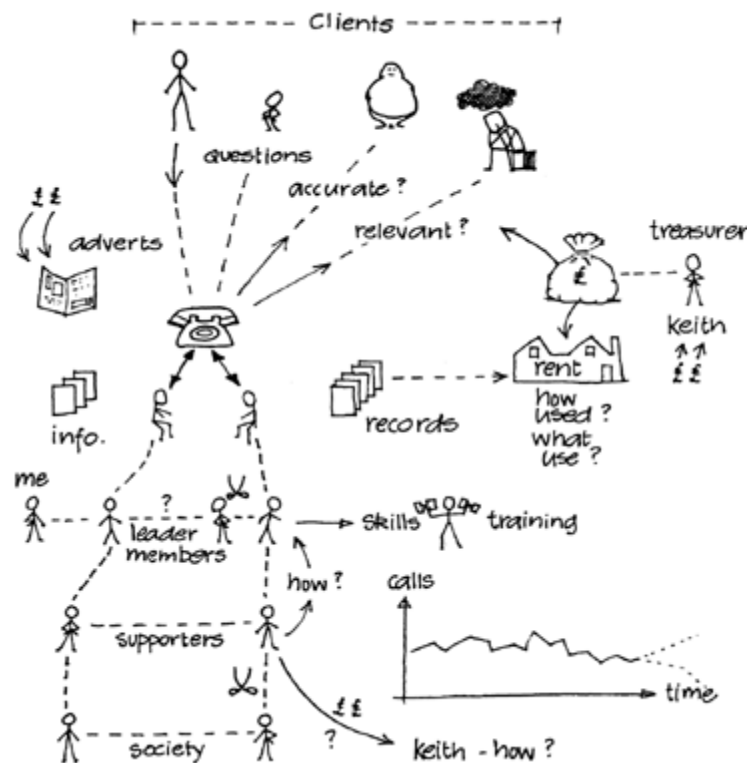
#### Stage2: Rich pictures, issues and primary tasks:

- ◆ **Rich picture**: you need some **efficient**, **economical** and **illuminating way** of summarizing or representing the situation in all its complexity – a rich picture.
- ◆ **Primary tasks**: these are the tasks, which the organization in question was created to perform, or the tasks that an enterprise must perform if it is to survive.
- ◆ **Issues**: these are the **topics** or **matters** which are of concern, or which are the subject of dispute: the (often unstated) question marks hanging over the situation.

## Rich Picture - Purpose

Rich pictures were particularly developed as part of Peter Checkland's Soft Systems Methodology for gathering information about a complex situation (Checkland, 1981; Checkland and Scholes, 1990). The idea of using drawings or pictures to think about issues is common to several problem solving or creative thinking methods (including therapy) because our intuitive consciousness communicates more easily in impressions and symbols than in words. Drawings can both *evoke* and *record* insight into a situation, and different visualization techniques such as visual brainstorming, imagery manipulation and creative dreaming have been developed emphasizing one of these two purposes over the other (Garfield, 1976; McKim, 1980; Shone, 1984; Parker, 1990).

Rich pictures are drawn at the pre-analysis stage, *before* you know clearly which parts of the situation should best be regarded as process and which as structure.



*Part of a rich picture of a telephone helpline situation*

Rich pictures (situation summaries) are used to depict complicated situations. They are an attempt to encapsulate the real situation through a no-holds-barred, cartoon representation of all the ideas covered already layout, connections, relationships, influences, cause-and-effect, and so on. As well as these objective notions, rich pictures should depict subjective elements such as character and characteristics, points of view and prejudices, spirit and human nature. If you are working with a client you should try to draw these from the actors themselves, at least initially, rather than focusing on your own interpretation of the situation.

### **Elements:**

- Pictorial symbols;
- Keywords;
- Cartoons;
- Sketches;
- Symbols;
- Title.

### **Conventions**

1. To help interpret a situation, choose symbols, scenes or images that represent the situation. Use as many colors as necessary and draw the symbols on a large piece of paper. Try not to get too carried away with the fun and challenge to your ingenuity in finding pictorial symbols.
2. Put in whatever connections you see between your pictorial symbols: avoid producing merely an unconnected set. Places where connections are lacking may later prove significant.
3. Avoid too much writing, either as commentary or as word bubbles coming from people's mouths (but a brief summary can help explain the diagram to other people).
4. Don't include systems boundaries or specific references to systems in any way

## Guidelines

1. A rich picture is an attempt to assemble *everything* that might be relevant to a complex situation. You should somehow represent every observation that occurs to you or that you gleaned from your initial survey.
2. Fall back on words only where ideas fail you for a sketch that encapsulates your meaning.
3. You should not seek to impose any style or structure on your picture. Place the elements on your sheet wherever your instinct prompts. At a later stage you may find that the placement itself has a message for you.
4. If you don't know where to begin, then the following sequence may help to get you started:
  - a. First look for the elements of structure in the situation (these are the parts of the situation that change relatively slowly over time and are relatively stable, the people, the set-ups, the command hierarchy, perhaps);
  - b. Next look for elements of process within the situation (these are the things that are in a state of change: the activities that are going on);
  - c. Then look for the ways in which the structure and the processes interact.  
Doing this will give you an idea of the climate of the situation. That is, the ways in which the structure and the processes relate to each other.
5. Avoid thinking in *systems terms*. That is, using ideas like: well, the situation is made up of a marketing system and a production system and a quality control system. There are two reasons for this. The first is that the word system implies *organized* interconnections and it may be precisely the *absence* of such *organized* interconnectedness that lies at the heart of the matter: therefore, by assuming its existence (by the use of the word system) you may be missing the point. Note, however, that this does not mean that there won't be *some* sort of link or connection between your graphics, as mentioned above. The second reason is that doing so will channel you down a particular line of thought, namely the search for ways of making these systems more efficient.
6. Make sure that your picture includes not only the factual data about the situation, but also the subjective information.

7. Look at the *social* roles that are regarded within the situation as meaningful by those involved, and look at the kinds of behaviors expected from people in those roles. If you see any conflicts, indicate them.
8. Finally, include *yourself* in the picture. Make sure that your roles and relationships in the situation are clear. Remember that you are not an objective observer, but someone with a set of values, beliefs and norms that color your perceptions.

### **Stage3: Relevant systems and their root definitions:**

- ◆ **Relevant system:** This is a system that is, in some way, relevant to the problem situation in the sense that it will yield insight into the situation when it (the system) is described more fully.
- ◆ **Root definition:** is a precise verbal description of the essences of the processes implied by the relevant system.
- ◆ **CATWOE** Checklist: A more difficult question to answer is: 'How do I know whether my root definition is complete?' To do this, you should run the definition by the CATWOE checklist.
  - **C** stands for 'customers of the system'. 'Customers' means those who are on the receiving end of whatever it is that the system does.
  - **A** stands for 'actors', meaning who (not individuals necessarily but types of people)
  - **T** stands for 'transformation process' - what the system does to its input(s) in order to transform them into output(s).
  - **W** stands for *Weltanschauung* or worldview. Using the W part of CATWOE forces you to be more explicit about the worldview.
  - **O** stands for 'owner(s)' - who have sufficient power over the system to cause it to cease to exist.
  - **E** stands for 'environmental constraints'. 'What constraints does the system take as given?'

### **Stage4: Conceptual models:**

- ◆ The model is a model of a human activity system. Its elements are therefore activities, and will be represented on paper as verbs.
- ◆ Arrange both the activities and the verbs in logical sequences.
- ◆ In building your model, you are not allowed to introduce any 'real world' considerations into it. You are required only to deduce what is logically implied by the root definition - and nothing else.

◆ **Stage5: Comparison of conceptual model with Rich Picture:**

- ◆ Now you are leaving the abstract world of systems thinking, and bringing your (now highly developed) relevant system back into the real world. The comparison stage involves overlaying, as it were, your abstract model on the problem situation as you have represented it, and drawing some inferences from the comparison between the two.

◆ **Stage6: Debate with stakeholders involved in the situation:**

- ◆ Those involved include those in the roles of client, problem owner(s) and problem solver(s), and other stakeholders as well.
- ◆ You will put to other participants some ideas about possible changes in the problem situation and trying to identify those ideas, which are agreed by the actors to, both systematically desirable and culturally feasible.

◆ **Stage7: Implementation of agreed changes:**

- ◆ This stage puts into practice the most appropriate changes identified in the previous stages. Soft methods are based on a rationalist model of human behavior.
- ◆ The types of change that come immediately to mind and are easy to implement:
  1. Changes in structures
  2. Changes in procedures
  3. Changes in policy
  4. Changes in attitude

**The Soft Systems Method is useful for:**

1. Determining what's going on and what actions can be taken to improve it.
2. The use in ill-structured or 'messy' situations, where people are involved and where there is no clear view of the problem or objectives (neither the means nor the ends are clear)
3. It takes multiple perspectives into account and makes no assumptions about systems existing in the 'real world'.
4. It is an interpretative 'process' method, useful where objectives are all intents and purposes non-existent.

**Criticism of the Soft Systems Method:**

1. The main criticism leveled at the seven stages approach of the SS-method is directed at its lack of comprehensiveness, particularly at the later stages of the analysis and design process. This has led critics to argue that it is not a method that takes the analyst through a complete project life cycle.
2. Although the role of the analyst is set out more forcefully than for the HS-method, there can be an implicit assumption (by the analyst, the person who commissioned the analysis, or the stakeholders) that the analyst is a neutral facilitator and Not an integral part of the situation.
3. In practice, some users of the SS-method have acted little differently to the straight external analyst role most often seen in hard methods while others have immersed themselves in the situation and worked extremely closely with all the participants.

**Five reasons why the SS-method is a systems method (strength):**

1. SS-method deals with contexts as wholeness;
2. SS-method invites multiple perspectives on the problem context;
3. The approach seeks to clearly define a boundary to the issue;
4. SS-method defines a system as a personal mental construct;
5. The methodology is fundamentally concerned with relationships within contexts.

**Five possible variances of the SS method (Weaknesses):**

1. To lose sight of the technology
2. To lose focus on data issues
3. To be unable to cope with the functionality of IS
4. To get side-tracked into non-relevant issues
5. To lose the ability to keep up with the rate of change.

Source: Managing Complexity, A systems Approach by the Open University.