User Centred Approaches to Information Services Development

Soft Systems Methodology: Rich Pictures

The Peter Checkland Model
Soft Systems methodology

“…is not a tool or technique to be used occasionally but a way to think and act every day…”

Peter Checkland
The Seven Stages

1. Enter situation considered problematical
2. Express the problem situation
3. Formulate root definitions of relevant systems of purposeful activity
4. Build conceptual models of the systems names in the root
5. Compare models with real-world actions
6. Define possible changes which are both desirable and feasible
7. Take action to improve the problem situation
CATWOE Checklist

- **Clients**: customers of the system
- **Actors**: people who carry out activities in the system
- **Transformation**: the changes that take place because of the system
- **Weltanschauung**: the world view or accepted assumption of the system
- **Owner**: those that the system is answerable to
- **Environment**: the external influences on the system
CATWOE: An Information Systems Example

Clients: Students

Actors: Librarians

Transformation: Access to copies of relevant extracts from articles and books to assist in studies

Worldview: Centre for learning with up to date student support from library services

Owners: Librarians

Environment: Licensing Agencies, Copyright laws
Root definition

Definition:
‘A system to paint the garden fence’.

Root definitions are complex BUT NOT definitive:
‘A householder-owned and staffed system to paint the garden fence, by hand-painting, in keeping with the overall decoration scheme of the property in order to enhance the appearance of the property’.
Investigating and understanding unstructured problems

The investigation of a situation (case) should provide a written agreement between the systems analyst (remember the ‘systems analyst’ could be ‘you’ or ‘you + team’) and the owner of the problem (one or several ‘stakeholders’). This often forms the basis for the design of the solution service, product or system (depending on the scope of the problem/solution).

Agreement between analyst and the owner of the problem is essential so that both parties are clear as to what the problem is before a solution design is sought.
The unstructured situation

- Understanding a new place you have just arrived at - e.g. on holiday
- A new company that you have just started to work for
- Studying an organisation as part of your degree course - Organisation Study
- A case study that you have been provided as an assignment
Understanding unstructured situations

- Unstructured means - “not formally or systematically organised: loose, free, open etc,” - this may seem to be in contradiction to the term “organisation” itself.

- Exploring and understanding an unstructured situation requires objective investigation and analysis

  e.g. Why are hospital waiting lists in the UK too long?
Exploring the Unstructured Situation

Initially,

- the problem owner has identified that something is wrong or that something needs improving

Critical analysis is usually applied:

- Approach the problem with an open mind
- View the problem from multiple perspectives (particularly technological, organisational and people perspectives)

The analyst engages in fact finding using conventional methods, including:

- interviews, observing, reading background material and documentation, providing questionnaires and measuring processes.
Exploring the Unstructured Situation

- The analyst gains a mental picture of the unstructured situation.
- Identifies roles, responsibilities, processes and accepted norms.
- Produces a definition of the unstructured situation, by using, for example:
  - Rich pictures and/or CATWOE
A rich picture is a sketch or diagram, using specific symbols, usually hand drawn, that depicts these key aspects of a situation:

- the **organisational structure**
- the **physical characteristics** of the situation, buildings etc.
- the **processes** that are carried out by the situation/system
- the **relationship between processes**
- **issues** expressed or felt by individuals in the situation - complaints, criticisms, feelings etc
Commonly used symbols
A few symbols are commonly used to describe certain entities within the situations. But these symbols are not prescriptive and any such pictorial representations may be used.

- Movement or Transportation
- Conflict or disagreement
- A relationship
- External Scrutiny
- A thought or opinion
- A person in role
A simple rich picture

CLA

Publishers

Authors

You can’t copy that!

I don’t have time to sort this

Too few copies + too slow by post

Academic

Student

Librarian

Photocopy to **paper** to give in class or post

or

Scan for **online access**
The Rich Picture - more art than science? Holistic, ongoing, subject to revision as problem is further investigated ...

Hazards include:
- assumptions made must be justified
- small issues can be blown out of proportion
- too much detail will obscure the overall richness of the picture
- too little detail will not serve the purpose of the picture.
The rich picture techniques may appear childish at first but can be a very powerful tool in understanding an unstructured situation …
Purpose of the Rich Picture

1. To help **visualise the complex** (unstructured) situation from all its many perspectives
2. To **avoid imposing a rigid structure** on the appreciation of the problem situation
3. To **aid an investigative approach** by the analyst
4. To act as a **communication tool** between participants
The Relevant System

- The rich picture is a **pictorial representation** of the **problem situation**

- In order to move on this needs to be viewed from a systemic point of view – using the Soft Systems approach, this is known as the “relevant system”

- The relevant system should be discussed and agreed between all involved parties

- It is expressed by the use of a **root definition** – describing the essence of the relevant system
Example 1

Rich Pictures

1. "Who wants tea?"
2. "Do you want milk & sugar?"
3. "Put kettle on."
4. "Tea brewed."
5. "Bring the tray."
6. "Here's the tea!"
7. "Visitors"
Example 3