Diagramming: Systems maps

A systems map is a snapshot of a situation at a moment in time. It shows the components of a system and its environment at that point from the perspective of the person drawing the map. It is thus possible to draw different systems maps of the same situation by choosing to place the boundary in a different place (thereby creating a different system of interest). A conscious decision to place the boundary in a different place is the same as choosing to view the system from a different perspective.

The main uses of systems maps are to help you to decide how you are going to structure a situation and to communicate to others just what system you have chosen to study. In particular, systems maps are used for the following purposes:

1   to clarify thoughts at an early stage of analysis

2   to decide upon structural elements for a more detailed diagram

3   to experiment with trial boundaries

4   to decide upon the level of your system of interest ('focusing')

5   to communicate to others the basic structure of the system you are describing.

Elements

The elements of a systems map are:

- blobs
- words
- a title.

N.B. linking lines, arrows, etc. are not permitted elements.

Conventions

1   The lines around the blobs (1–6 in Figure 22) represent boundaries of system components.

2   Words (e.g. aaa, bbb, ccc) are used to name each system or component.

3   Blobs (5 and 6) outside the main system boundary (1) represent components of the environment.

4   Blobs (2, 3 and 4) inside the system boundary (1) represent components of the system. Components (e.g. 3) can be shown as grouped into sub-systems (2).

5   Blobs may overlap only if some components (which need not be depicted) are clearly common to both.
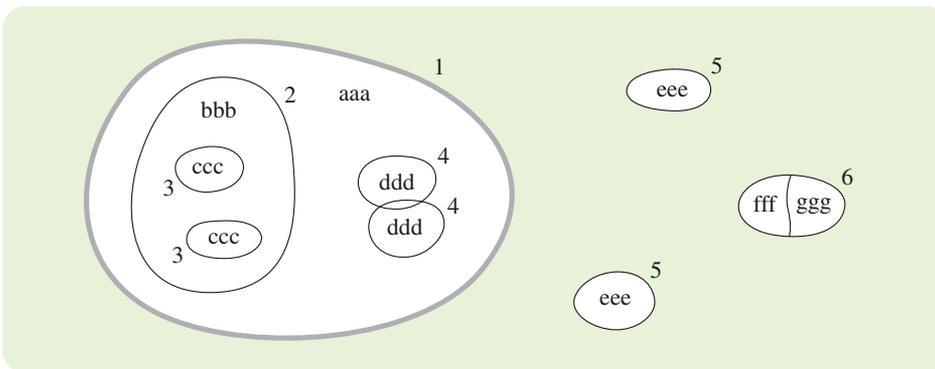

Figure 22   Format of a systems map

Guidelines

1   Identify and write down in the form of blobs all the elements in the situation. In a second iteration assemble all like elements together and draw in system and sub-system boundaries.

2   Make clear which is 'the' system boundary. The system boundary can be emphasised by the use of colour, by giving it a name, or by a thicker line. A dashed line can be used to emphasize that the boundary is subjective and tentative.

3   Irregular blobs are normally preferable to regular boxes. Boxes imply that (sub-) systems are clearly defined, which is seldom the case, and have the practical disadvantage that the eye finds it hard to distinguish between a series of parallel lines.

4   Use overlaps sparingly. They tend to reduce the impact and clarity of the map. Overlap only when the sharing of components is important from your particular viewpoint. This applies equally to components within and spanning the boundary. Multiple overlaps should be avoided. It is virtually impossible to interpret overlaps on more than three sub-systems.

5   Aim for consistency between components. For example, avoid representing system properties as elements.

6   Although the size of blob used is not determined by size, importance or other characteristics of the component that it represents, it makes sense to show important sub-systems at a reasonable size, and less important ones somewhat smaller, as this is the way relative size is likely to be interpreted by a reader.

7   Similarly, although there are no firm rules on the positioning of components (other than nesting and overlapping) it makes sense to put important related components close together. This will facilitate subsequent additions of sub-system boundaries.

8   It is a good idea to leave some space within your map. Not only does this allow components to stand out clearly but it also leaves room for any components you may want to add later.