

Complexity Reduction

concept cards[©]

FOR TEAMS, MANAGERS OR LEADERS

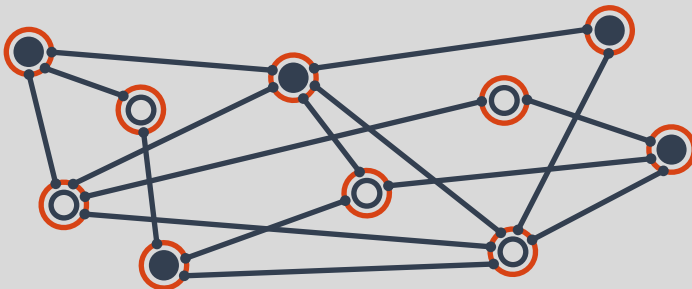
With more dependencies, information, precision and constraints complexity is every increasing.

Complexity

A thing (system, process, project, etc.) is complex if:

- a. it has an overall state that is changing
- b. it has several elements that each have different states that in total make up the overall state
- c. the elements have mutual relationships and change state as a reaction to other state changes
- d. the relationships are non-linear
- e. the resulting states at any one point in time are difficult to predict.

Complexity increases with the amount of elements, the degree of dependency and interactivity, the level of non-linearity and the difficulty to product resulting states.



Complexity Reduction

1. Modularize — encapsulate elements so that there are as few as possible connections between the modules.
2. Make information hierarchies — structure all information within a module or element from general to specific. Information hierarchies are the easiest to understand ordering systems.
3. Prioritize relationships — understand where the strongest relationships are and where the biggest reactions will occur.
4. Visualize — Visualization is one of the best means to present complex things. Try to put everything on one (large) sheet. It is always possible to map more dimensional information onto two-dimensional areas or grids. Use stacks of layers if you need more dimensions.
5. Distinguish between states and actions (state changes) — it is easier to think in states because they are static. Plan result states from iteration to iteration and only then think about the actions that need to take place in between states.