A Whack on the Side of the Designer's Head: Toolkit for the creative developer

Martine M. Devos

EDS EIT - Strategy

Most system analysis and design books have a shortcoming. They focus on analysis of the old system and documenting and implementing the new, but they give little attention to conceptual design. It is at that time that the practitioner exercises his experience and imagination to come up with a new system concept. Years ago De Marco noted "I won't tell you how to do it… no tool that I could think of would aid the innovation process". And today design is still treated as largely a matter of having a group of intelligent, creative people together and … then the magic is supposed to happen. The magic remains unexplained and largely unexplored and, to a large extend, ignored.

Conventionally understood forms of reasoning apply logically to evaluative and analytical types of activity in design (inductive and deductive reasoning) and appeal to the engineer. But the type of activity that is most particularly associated with design is synthesis, for which there is no commonly acknowledged form of reasoning. Creative techniques can enhance information systems. Divergence activities can be useful in each phase of the development process to enable the development team (for some stages together with users) to consider a wider range of alternatives before going on to the next phase. But techniques are different for each stage of the lifecycle. Some of them are abused (brainstorm) or used at the wrong moment.

As scientists engineers like to use a strategy of systematically trying to understand the problem. Well-defined problems have a clear goal, often one correct answer and rules for how to proceed.

Ill-defined problems have a number of characteristics:
1. There is no definite formulation of the problem
2. Any problem formulation may embody inconsistencies
3. Formulations of the problem are often solution dependent
4. Proposing solutions may help to reach understanding the problem
5. There is no one definite solution to the problem

Design problems are widely recognized as ill-defined problems

It is then useful to use both analysis (problem focused) and synthesis (design and solution-focused). For complex and wicked problems solution and problem are then both developed in parallel or at least understood in parallel what sometimes leads to a creative redefinition of the problem.

In this tutorial we give an introduction to some of the techniques and methods that can support the designer. Its main intention is to bring some "rationality" in the choice of creative processes. Participants gain inside in when to use what supporting method during the OO-development cycle.