

## Combining social and technical instances within design processes: a Value-Focused Thinking approach

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The design of quality alternatives is still considered as a crucial issue in many decision-making contexts, moreover in the field of sustainable urban development.

Starting from the analysis of strengths and weaknesses of cities and territories and passing through a crucial phase of problem structuring, planners and architects investigate needs, values and objectives in order to identify the most satisfactory alternative from among all those available to them. Addressing decisions to the good enough solution rather than to the optimal one depends on many reasons, such as: the difficulty to access and process all the information needed to take a good decision; the instance of achieving a balance among different dimensions of territorial and urban development, namely the economic, environmental and social ones; the not always consensual preferences of the stakeholders generally involved in these kind of processes.

Within this context what deserves to be explored and represents a major challenge is the modeling phase, when objectives are identified and alternative strategies and actions are defined. Moreover, the acceptance of the bounded rationality paradigm requires to pay a particular attention to the generation of alternatives, which are not given but should be defined starting from a cognitive map of technical requirements, in addition to expectations and values expressed by the social system and with respect to economic constraints.

Starting from these premises, the paper proposes a multi-methodological analytical framework based on the Value-Focused Thinking (VFT) approach introduced by Keeney in order to consider all the phases of the planning and design process from the elicitation of objectives, to the definition of strategies until the design and evaluation of the alternatives. With the aim of providing a contribution to the empirical line of research on alternative generation, the paper experiments the VFT procedure within a design process developed by eleven project teams for the sustainable development of a disused area in Portugal.

Starting from values' elicitation rather than from the analysis of "given" alternatives, the results of the experiment underline how the analysis of both social and technical aspects has improved the design process. The VFT has allowed an effective elicitation of objectives and then the "conversion" of objectives in strategies/design recommendations. Since different combinations of strategies result in different alternatives, higher is the set of strategies, higher the number of possible alternatives and then higher the probability to create high quality alternatives.

Finally, the paper shows how the decision domain can be expanded by generating unknown alternatives.

Keywords: Design process, Values, Social instances, Technical requirements