Franco, A. & Montibeller, G. (2009): Facilitated modeling in operational research

The authors compare in this paper the traditional way of operational research in organizational interventions – the expert mode – with the alternative way of using facilitated modeling as an intervention tool. In the first case the problem is solved by the consultant more or less alone, in the latter case the whole intervention process in conducted with the client together.

After comparing both approaches and discussing underlying assumptions of each approach, Franco and Montibeller focus on facilitated modeling in the rest of the paper. They elaborate the facilitated modeling process, the nature of facilitative models, outcomes of the modeling process and required skills of the modeler. Finally different facilitated modeling types and design dimensions of the intervention process are conducted. In the following the main points are summarized.

Introduction

- Modeling and analysis are at the core of operational research interventions.
- <u>Expert mode</u>: Operational researcher uses OR methods to solve the problem of the client.
    - ➔ Not appropriate for problems at a strategic level, because:
        - o Several stakeholders with conflicting perspectives, objectives, values and interests.
        - o No agreement on scope and depth of problem situation.
- <u>Facilitated mode</u>: Carry out whole intervention together with the client.
    - ➔ Suitable to support complex problem situations
        - o Help to define the nature of the problem situation.
        - o Evaluation of priorities and development of plans for subsequent implementation.

Comparing modes of consultancy engagement

	Expert mode	Facilitated mode
Framing	Problems as real entities. Avoiding biases from different perspectives.	Problems are socially constructed. Negotiating of problem definitions.
Formulation	Precise formulation.	Structured by the management team & supported by researcher.
Defining metrics	Expert defines metrics.	Metrics reflect objectives of the organization.
Collecting data	Extensive collection & quantitative nature.	Quantitative and qualitative data.
Evaluating options	Model is solved by the researcher.	Interactive conduction of options.
Presenting results	Detailed back reporting with all assumptions.	Interactive presentation of results. Management team can play with the model.
Action committing	Client is committed to implement the results.	Participatory process increase commitment.
Payment	Client pays for the analysis,	Client pays for decision support,

	prescription of solutions and expertise.	recommendations and expertise.
Aim	Provide optimal solution.	Help client to learn more about the problem.
Assumptions	• Objective analysis. • Client wants optimal solutions. • Scientifically-based analysis is straightforward.	• Subjectivity is unavoidable. • Client wants satisficing solutions. • Participation increases commitment for implementation.

Facilitated modeling

- Facilitated mode: Managing of client-consultant relationship and facilitated modeling.
- Formal model if it presents a problem situation in any of the following ways:
    - Activity or process flows.
    - Cause and effect relationships.
    - Relationships between decision choices and their consequences.

Process:
- Designed conversations to exchange understandings.
- Facilitated modeling as an iterative process.
- Organized into group work phases (structuring, agreeing on focus, model development, evaluate options, action plan development)
- Model-building process: Participatory, interactive and non-linear.
- Non-computer-supported and computer supported.

Nature of facilitative models:
- Facilitated transparent learning device as play tool.
- Increase of managers' multiple understandings of the situation.
- Support managers to negotiate courses of action.
- Model as facilitative learning mechanism.

Outcomes of facilitated modeling:
- Visible output: the model
- Invisible output:
    - Accommodation of multiple and differing positions among participants.
    - Analysis and manipulation of model variable relationships and decision options.
    - Participatory process leads to strong ownership.

Skills of the facilitative modeler:
- Active listening: Develop & summarize participants' contribution: paraphrasing & mirroring.
- Chart-writing: Writing styles, speed, symbol use, etc.
- Management of group dynamics & power: Step back from content and talk about process.
- Reaching closure: Help group to reach agreements, make commitments for courses of action.

Types of facilitated modeling

<u>Facilitated problem structuring:</u> 1. Assumption of subjectivism. 2. Groups as key organizational entity. 3. Limited role of quantification.

<u>Facilitated system dynamics:</u> 1. Dynamics and feedback loops of the regarded system. 2 Impact of decision policies/options over time.

<u>Facilitated decision analysis:</u> Involve multiple objectives and/or uncertainty of outcomes.

Intervention design dimensions

1. Focus of modeling: Problem structuring, Evaluation of options/policies.
2. Data gathering for model structuring: Bottom-up vs. top-down.
3. Data requirements: Qualitative & quantitative data.
4. Technology support: Manual vs. computer-supported.
5. Flexibility of modeling rules: Flexible vs. strict.
6. Degree of content facilitation: Weak vs. strong content facilitation.