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Back in 1982, J. Robinson coined the term **Backcasting** in an article on energy policy analysis and proposed its use as a tool with which to connect desirable long term future scenarios to the present situation by means of a participatory process. This method is used to develop normative scenarios and explore their feasibility and implications. Brainstorming and Scenario Building can be used by a group of stakeholders to create a shared vision of a desirable future(s), alternative solutions can then be set out and explored. In this process bottlenecks can be identified, an option chosen and an action plan set up to take the organisation from where it is at present to where it wants to be within the proposed timeframe.

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The FOR-LEARN Guide to Backcasting

This is a summary of the article on the method known as Backcasting from the FOR-LEARN guide. To read the full article go here.

The FOR-LEARN guide, highlights that Backcasting had its origins as a futures method to develop normative scenarios and explore their feasibility and implications in the energy field [Robinson, 1982]. It has been used widely by those addressing issues of sustainability, working back both from positive and negative (i.e. to be avoided if at all possible) visions of the future over both medium (e.g. 20 years) and long term (e.g 50 years) time spans.

Backcasting is usually used in complex situations where there is a normative objective that is subject to major uncertain future events. It can be characterised as a social learning process where the participants need to have a reasonable level of understanding about the system conditions, the degree of unpredictability as well as how the underlying social dynamics can exercise a major influence on both the processes and the outcomes.

The long term perspective that is often addressed in Backcasting makes it possible to let go of entrenched views of the present way of ?seeing? and ?doing? because vested interests are not directly threatened (e.g. ?It won?t be my problem in 50 years time, so I don?t mind thinking outside the box!?). It also has the advantage of providing a way to involve stakeholders at an early stage in the Foresight process by giving them the chance to develop a future long term vision of the desired scenario.

Using the method

One way of creating a vision of a desirable future is to employ methods such as Brainstorming or Scenario Building by a group of stakeholders. These are then used as a basis for alternative solutions that can then be explored and bottlenecks identified. Once an option has been chosen then an action plan can be set up and the stakeholders can define their roles and commit to them.

Step-by-step

The Backcasting process has been described as one of "thinking in jumps, acting in steps" because it provides a context where desired outcomes can be translated into proposals for actions. Then all participants can see what their role could be in bringing about the desired transformations.

The following steps can be followed:

- Strategic problem orientation and definition. Orientation on the problem to assess the present need and clarify current and future unsustainable aspects. This includes the identification of relevant stakeholders.
- Development of future vision. The next step is to create visions on how a future can be established where the assessed problems and unsustainable aspects are solved. Charcoal sketches are made to visualise the long term future scenarios.
- Backcasting: Set out alternative solutions. Possible ways to develop the desired future are developed and discussed among the participants

Implementation

- Explore solutions/options and identify bottlenecks: The different solution pathways are further defined and analysed. This is to prepare the selection process in the next step. A method that could be used is LCA (Life Cycle Assessment).
- Selection of option and implementation of an action plan: The pathways are discussed among the participating stakeholders and one pathway is chosen as the one to be implemented. Part of this step is the development of an action plan, identification of possible bottlenecks and thought given to how to tackle them.
- Define roles of stakeholders and setup co-operation agreements: A solid platform for action is set up, in which all major stakeholders participate. Responsibilities are identified and established by means of long term agreements. An innovation champion is identified who can carry the work forward.
- Implement research agenda: In the last step, the action plan is translated and implemented to the research and development agendas of the individual participating stakeholders
- The main types of output are:
    - Inspiring charcoal sketches of future visions and possible pathways to them.
    - In depth economic, cultural and technological analysis of the pathways.
    - Joint ventures on specific pathways
    - Shared visions

Pros and cons

The FOR-Learn guide highlights the need for social and process oriented skills as well as the obvious need for experience in LCA and further economic analysis. The FOR-Learn guide also points out that, because of the long

term perspective, it is possible for stakeholders who have conflicting interests to freely discuss problems without feeling that their immediate interests are threatened. Moreover, the content and process is integrated in a practical approach.

The negative side to Backcasting is the somewhat long project time needed; taking 1 to 2 years. This leads to the possibility that the representatives change, leading to delays. The FOR-Learn guide warns out that the process can be quite resource intensive, requiring substantial financial resources (e.g. up to €500,000). Also the technological character can sometimes be too dominant, "scaring" representatives.

A very important aspect that is often forgotten is the need for follow up monitoring and evaluation of progress.

Variations

The Backcasting method described here is often used in the sustainability arena and has as a key feature its high participatory aspect. Other variants are:

- Quantitative modelling using Backcasting
- Backcasting quickscans.

Complementary methods

In the process of carrying out Backcasting, the following complementary methods are often used:

- Essays to sketch future visions.
- LCA and economic stakeholder analysis for describing the alternatives.
- Technological roadmapping for description of the alternatives.
- Brainstorming workshops for inspirational creation of alternative pathways.

Checklist

- Is there a mismatch between the desired future vision and the present situation?
- Does the solution need co-operation between different institutional stakeholders?
- Is the future perspective long term?
- Has my team got the necessary experience in participatory processes?

See also

Environmental Scanning & Monitoring
System Dynamics
Structural Analysis
Agent Modelling
SWOT Analysis
Trend Intra & Extrapolation
Modelling & Simulation
Gaming

Creativity Methods
Delphi survey
S&T Roadmapping
Critical & Key Technology Study
Scenario Building
Morphological Analysis & Relevance Trees
Cross-Impact Analysis
Multi-Criteria Analysis