InEDIC Ecodesign Manual

Tool 12: Improvement options evaluation matrix

The purpose of this matrix is to evaluate the product improvement ideas that were generated during the brainstorming session regarding its technical, financial, market and environmental feasibility.

The application of this matrix allows the ecodesign team and top management of the company to have a basis to decide if a given improvement option is to be implemented in the short, medium or long term, or if it should be simply discarded. In some cases, additional research may be necessary to adopt an idea.

This tool may be applied in a qualitative manner, during a debate session of the ecodesign team and the support group, or it may be completed after more in-depth studies using the environmental analysis, life cycle costing or market analysis methods presented in the Manual. The evaluation may be undertaken by company members alone or may require external expertise; it depends on the complexity of the ideas and the time the team is obliged to invest in this phase. In any case, it is important to register the assumptions that were behind any scoring. Subjectivity is not a problem if it is managed in a transparent way.

In view of the design brief, additional criteria (e.g. aesthetic, ergonomic, etc.) may be added.

For a qualitative evaluation, the following aspects should be considered:

- **Technical feasibility**: Are the required technical resources available in the company? Are there risks to decrease the quality of the product? Are required new raw materials easily available? Are new technologies tested and available in the market? Are suppliers known and trusted? Is new equipment necessary? Is new staff or new competences necessary?

- **Financial feasibility:** What is the investment required and its return? What is the financial impact of the improvement options along the life cycle?

- **Market feasibility:** Does the idea have a strong influence in the market? If yes, how does it perform according to the Porter's 5 Forces? (see chapter 5 and tool 3)

- **Environmental feasibility:** Are there savings on materials and energy consumption? Is there an increase or decrease of waste and emissions? Often there are trade-offs, as an ecodesign option has both weaknesses and strengths from an environmental point of view. Often enough, rough estimates with regard to energy and material flows can be made without great expenditure and thus sufficient information can be made available for assessing the environmental optimum. This can be confirmed in a rigorous way through quantitative life cycle assessment (see ***chapter 6 – Environmental analysis***).

Other fields in the matrix are:

- Timeframe for implementation: the team should identify whether the option under consideration is part of an implementation perspective in the short term, medium or long term. This timeframe is naturally dictated by the overall company strategy.
- Level of analysis: Here the team should register the sufficiency of the analysis performed or if the ecodesign option should be further investigated before a decision can be made regarding its implementation. Someone in the team should be assigned the responsibility of following up options that were left for further study.
- Remarks: There is also a field to enter observations, to justify choices, or simply to add any relevant comments that it finds.

After the evaluation of all options, the team should select the ideas that will be worked out in the new product concept.

<table>
<tr><th></th><th colspan="7">Evaluation Matrix</th></tr>
<tr><th rowspan="2">Improvement option</th><th colspan="4">Feasibility</th><th rowspan="2">Timeframe for implementation</th><th rowspan="2">Robustness of the analysis</th><th rowspan="2">Remarks</th></tr>
<tr><th>Technical</th><th>Economic</th><th>Environmental</th><th>Market</th></tr>
<tr><td>Option 1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Option 2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Option 3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Option 4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Option 5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Option n</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="3">Score</td><td colspan="2">Feasibility</td><td colspan="5">“0” – Negative or unfeasible
“=”– Neutral
“1 to 5” – Positive to very positive
“R” – Extra research is needed</td></tr>
<tr><td colspan="2">Implementation</td><td colspan="5">“ST” – short term “MT” – medium term “LT” – long term</td></tr>
<tr><td colspan="2">Robustness</td><td colspan="5">“1 to 5” (from low robustness to high robustness)</td></tr>
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