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A method to aggregate LCA-results with preserved transparency

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Scope

- Basis for the method
  - Data quality and transparency
  - The dynamics of an LCA model
- The tool LCA-E
- Conclusions

Basis for the method

- A rational decision maker
  - An ideal context with access to all information; to set the limitations for the quality requirements on the database
- LCA as a statement about the real world
  - A model that describe certain properties and relations in the real world and that can verify or reject statements based on real measurements; to aim at an LCA model with high precision
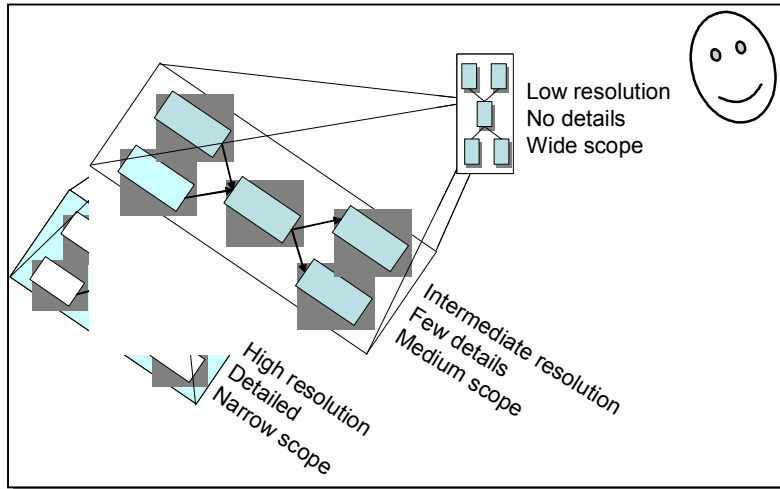
Data quality and transparency

Data is reliable if it can be transparently reviewed, i.e. if it is described in a relevant, structured, and understandable way.
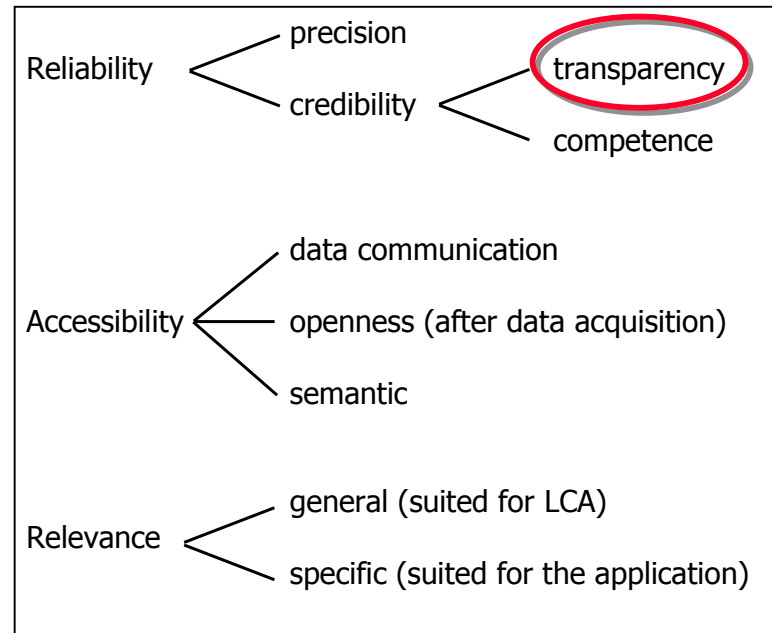
The data quality concept as defined at the competence center CPM, Chalmers.

The dynamics of an LCA-model

Low resolution
No details
Wide scope

Intermediate resolution
Few details
Medium scope

High resolution
Detailed
Narrow scope

A recursive LCA model
- Navigation between high and low resolution, narrowing and widening of scope
- Facilitates up-dates and transparent reviews

A parametric LCA model
- Manipulation of detailed parameters at any level
- Facilitates quick and easy LCA's for a specific context

Parameters of details of the system
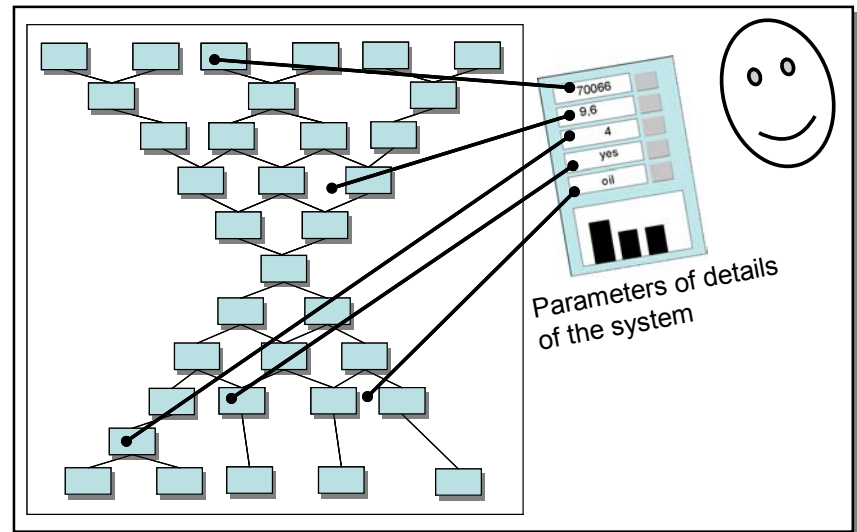
The web based tool LCA-E

- A project involving the competence center CPM at Chalmers, the Swedish industrial research and development corporation IVF, and a reference group of companies, 2000-2003
- More information and a prototype can be found at http://extra.ivf.se (with mainly Swedish instructions)

- A reliable and to the point screening LCA tool in the product development of printed circuit boards (pcb)
- The LCI-scope was prefabrication, manufacturing, and use processes for pcb
- The IA-policy was set by the impact categories in the EPD-system and the IA-models derived from Eco-indicator'99, EDIP, and the EPS System
- The data quality in the database is based on the data quality concept defined at CPM and the framework of ISO 14040
- The recursive choice of resolution was based on data inventories of electronic components (cables, capasitors, connectors,...) at that time
- The parameters chosen to provide the required modularity was the amount of components on the pcb and the electricity needed in the use phase
- The result is a simple and easy to use interface with a complex database structure and design behind it

Conclusions

A method for maintaining data quality, in terms of transparency, when aggregating and communicating LCA-results:

The method is easy and practical to work with. It provides the modularity needed for the specific context, enables quick results that are easy to understand, but still allows for updates and transparent reviews.