
Quality of LCI data: Industry needs, reasons and challenges for the future

International Workshop on Quality of LCI Data

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Quality of LCI data

Do we need a discussion about the quality of LCI-data ?

- ⊗ Requirements for the quality of LCI-data are strongly linked to their application (where and for what purpose the data will be used)
- ⊗ Therefore data quality has to be discussed in the context of the application of the data

LCI / LCA applications in industry

Current status...

- ⊗ **LCA-based instruments are a suitable tool to analyze the environmental profile of a product or a service taking into account the complete life-cycle**
- ⊗ **A lot of big companies are using life-cycle based instruments on a voluntary basis for internal studies, whereas SMEs - in general - do not use this time and cost-intensive instrument**
- ⊗ **Due to the life-cycle based approach LCAs are able to identify trade-offs and conflicting targets e.g. caused by different environmental legislation**

Reasons for LCI / LCA applications in industry

LCA based results are used for different purposes:

- ⊗ Analysis of the environmental profile in order to determine hot-spots and optimization potentials of a product
- ⊗ Support of decision processes with additional environmental information
- ⊗ Information for and dialogue with the public, governments, legislators, NGOs, ...

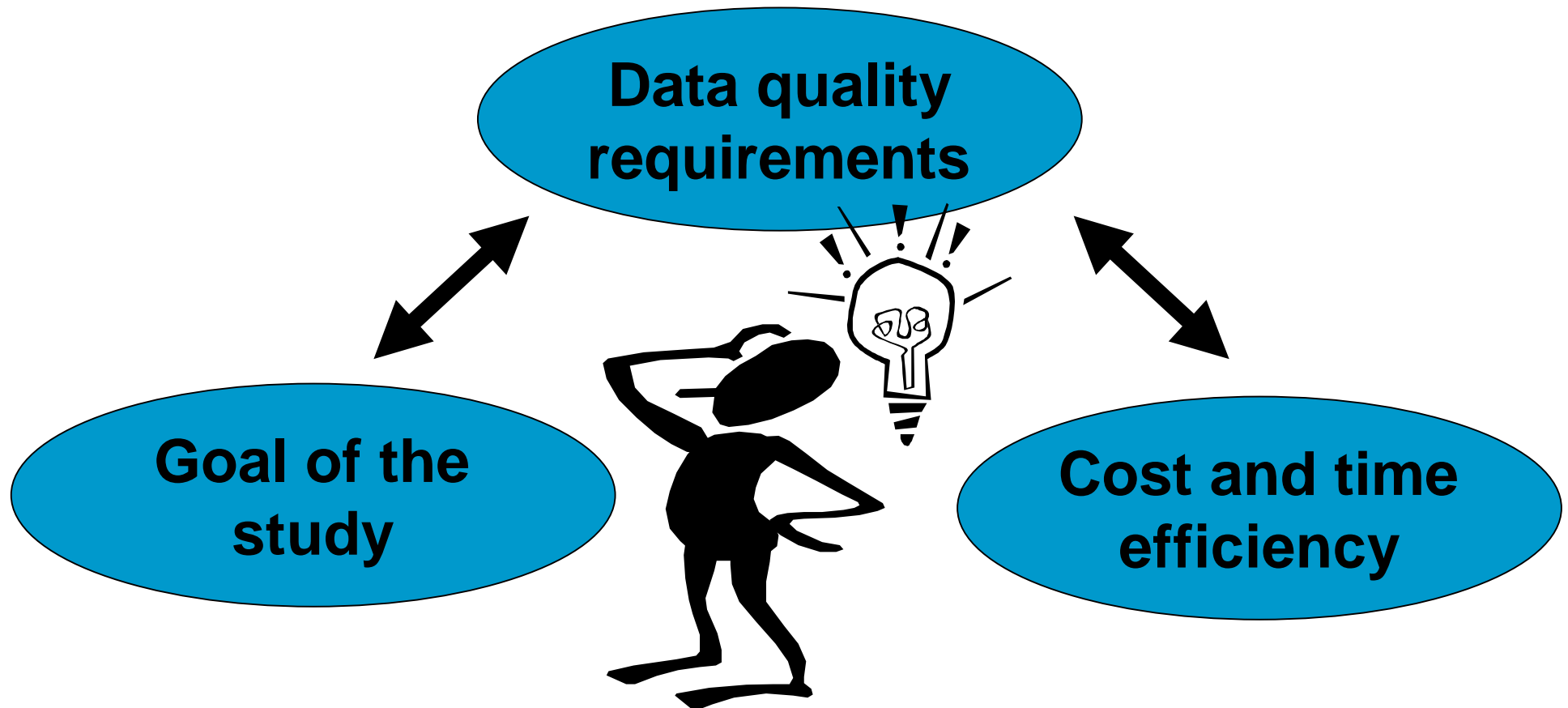
For comparative assertions disclosed to the public the ISO series 14040 has to be considered

Characteristics of LCI / LCA based instruments

However, LCI/LCA based instruments

- ⊗ are not a comprehensive tool to design the environmental profile of a product, a process or a service
- ⊗ can only contribute to the environmental share of information used in the decision-making process
- ⊗ provide a snapshot of an essentially dynamic process
- ⊗ are time and cost intensive

Data quality requirements



Golden mean between the academically desirable and the realizable in order to get stable and meaningful results

Aspects of data quality

⊗ **Data availability**

- How to deal with data gaps ?

⊗ **Data consistency**

- How to deal with a mixture of data deriving from different sources ?

⊗ **Appropriate data with regard to the goal of the study**

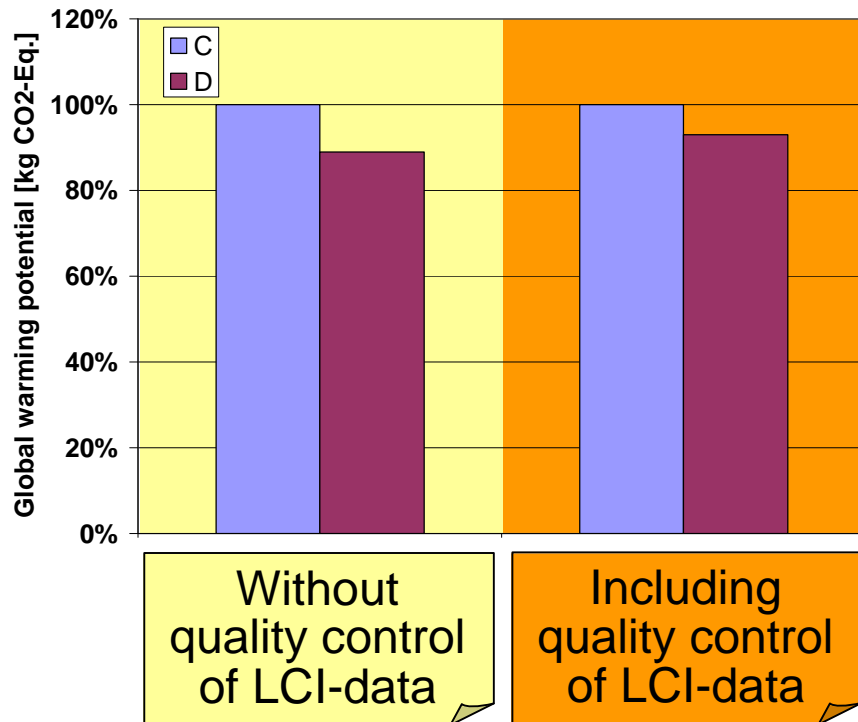
- Generic data vs. site specific data vs. average data

⊗ **Meta data in order to improve the confidence in the results**

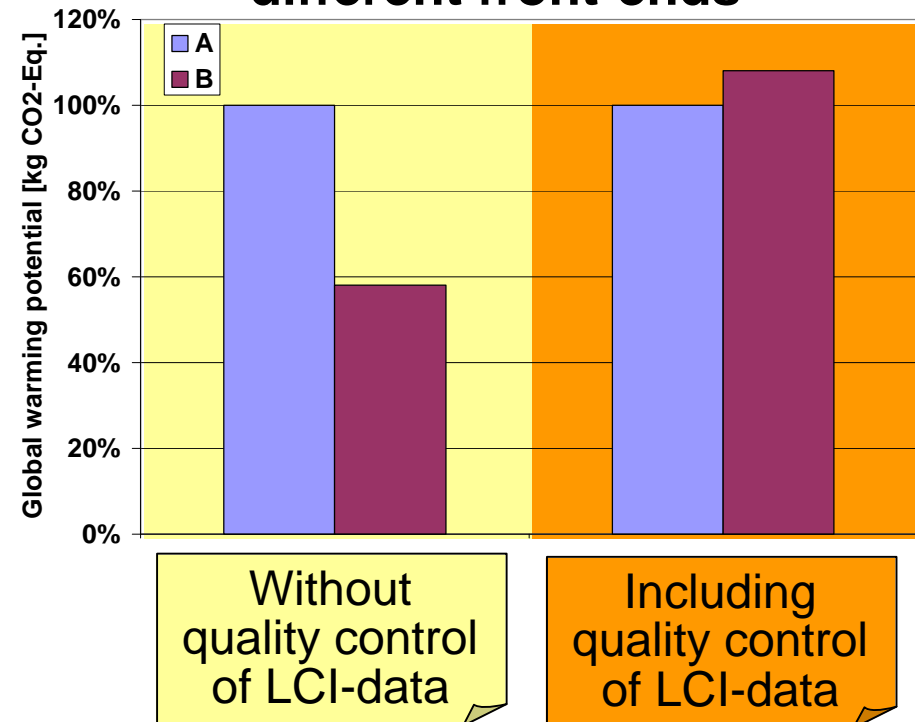
- Geographical horizon
- Time horizon
- Data precision
- Data completeness
- Data representativeness
- Data source
- Contact person
- Flow chart of the process
- Scope

An example from daily work...

LCA comparison of two different axes



LCA comparison of two different front-ends



Quality of LCI data *can* have an important impact on the results !

Conclusions and challenges for the future

Conclusions

- ⊗ The quality of LCI-data *can* have an important impact on the overall results
- ⊗ The variability of different LCI-data of the same product shows that single LCI data of complex products is highly questionable e.g. average LCI data of a computer, car, ...
- ⊗ Quality requirements of LCI-data were defined by the overall requirements of the life-cycle study

Challenges for the future

- ⊗ Improve the availability of LCI data including quality control
 - in order to demonstrate the variability of certain processes
 - in order to choose the “right” data with regard to the goal of the study
- ⊗ Meta data is a necessary pre-requisite in order to increase the quality and credibility of life-cycle based studies

**Thank you for your
attention !**