

# What can LCA learn from service design – User integration?



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# Purpose & questions



The purpose is:

- to further develop the LCA methodology
- to integrate user into the design process

The questions are:

- What can life cycle methodology learn from service design?
- What are the similarities and differences?

# Research approaches



Literature study and case studies:

- Literature study on user integration and LCA in the service sector
- Several case studies in the leisure industry, such as opera/theatre, tourist and film – design and model
- The service design process and LCA methodology

# Results – literature study



Eco-innovation in 100 large Swedish companies show that less than 10% of measures are related to user integration.



“LCA, consumption and service” shows that services depend on time and the number of users.

“More and more service – less and less impacts”.

# Results – case studies

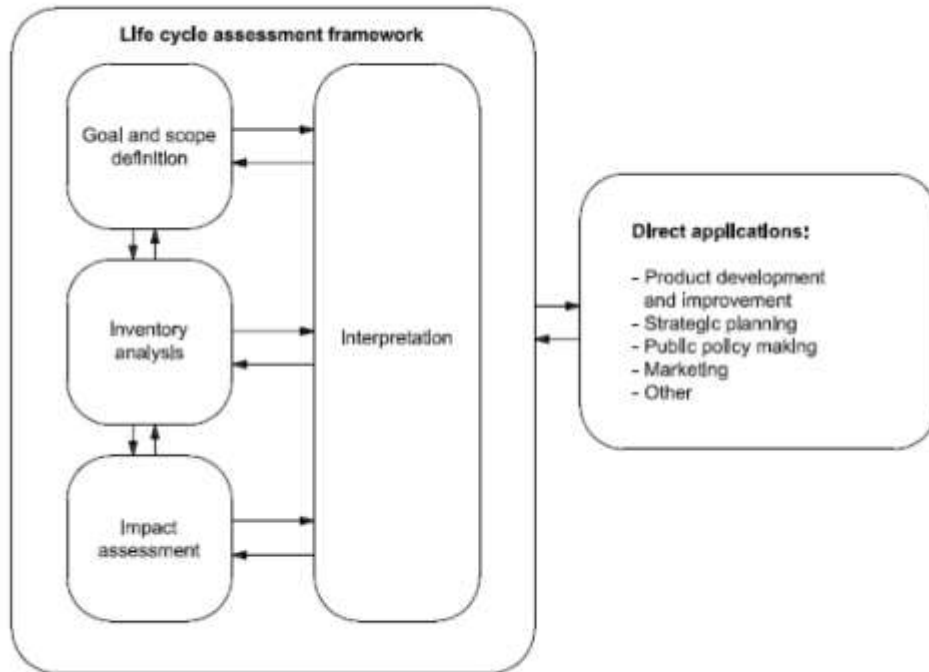


How are user involved in the design and model?

- Opera study: interviews with users, consumer surveys, functional unit with a consumer perspective (e.g. per sold ticket)
- Tourist study: follow the tourist, consumer surveys and statistics, fu with time perspective (e.g. per day)
- Film study: production design and model based on locations & time



# LCA methodology



1. Goal and scope
  - Problem and system
2. Inventory
  - technical system
  - environment
3. Impact Assessment
  - indicators
4. Interpretation
  - technical solutions
  - hot spot analysis of various kinds

(ISO 14044:2006, Bauman and Tillman 2004)



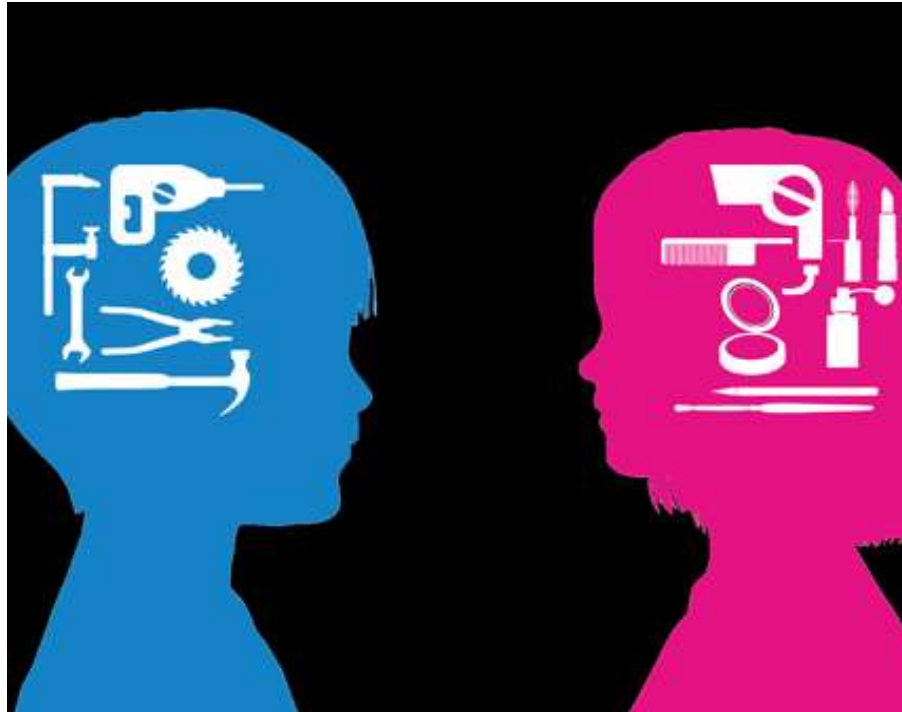
# Results – user integration?



- service design is developed close to the customer
- including study visits and observation,
- which the life cycle methodology seems to lack.



# Results – similarities & differences



## Similarities:

Problem and solution

Life cycle perspective

## Differences

Technical or service problems

Sort complex systems or time

# Conclusion – user integration?

- Yes, we recommend to integrate the user more
- More focus on implementation and visualisation .



Thank you !