

Sustainability of Design for Circularity:

The Importance of Design Choices and User Behavior for the Environmental Performance of the Furniture Industry

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ENERGY AND CIRCULAR ECONOMY

With support from



Users in a circular economy



- Accept other means of "having" products
- Adopt new business models
- Change behaviour

Circular business models (CBM)



Question

What are the environmental impacts of circular business models, taken different user behaviour into account?



Approach and Method

1. Identify the users and their view of the CBM*

- Interviews, Focus groups

2. Calculate environmental impact

- LCA on 4 case studies on different public furniture
- Compare circular business models with linear

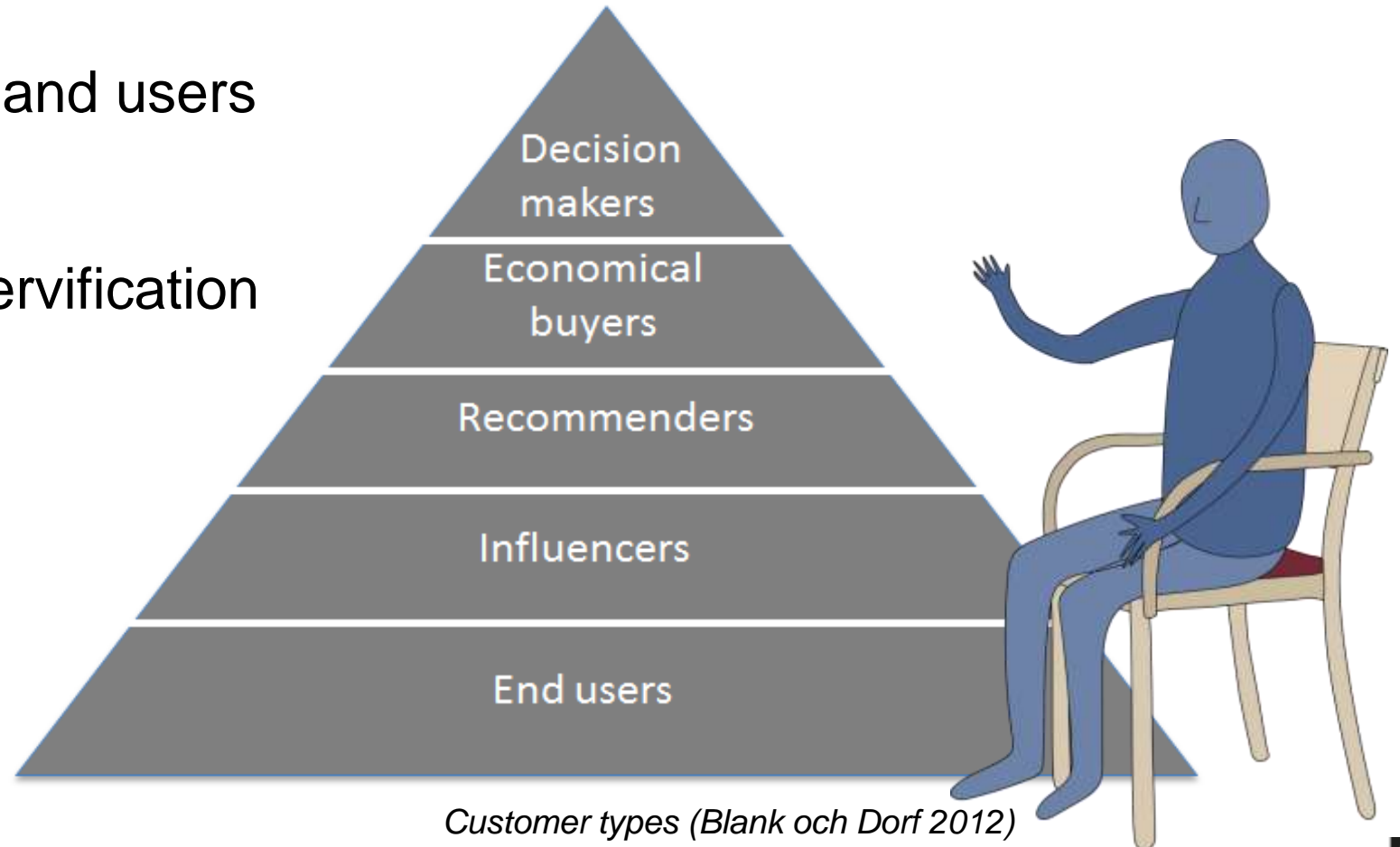
3. Analysis and discussion

- Interviews/discussions with producers, Scenario analyses

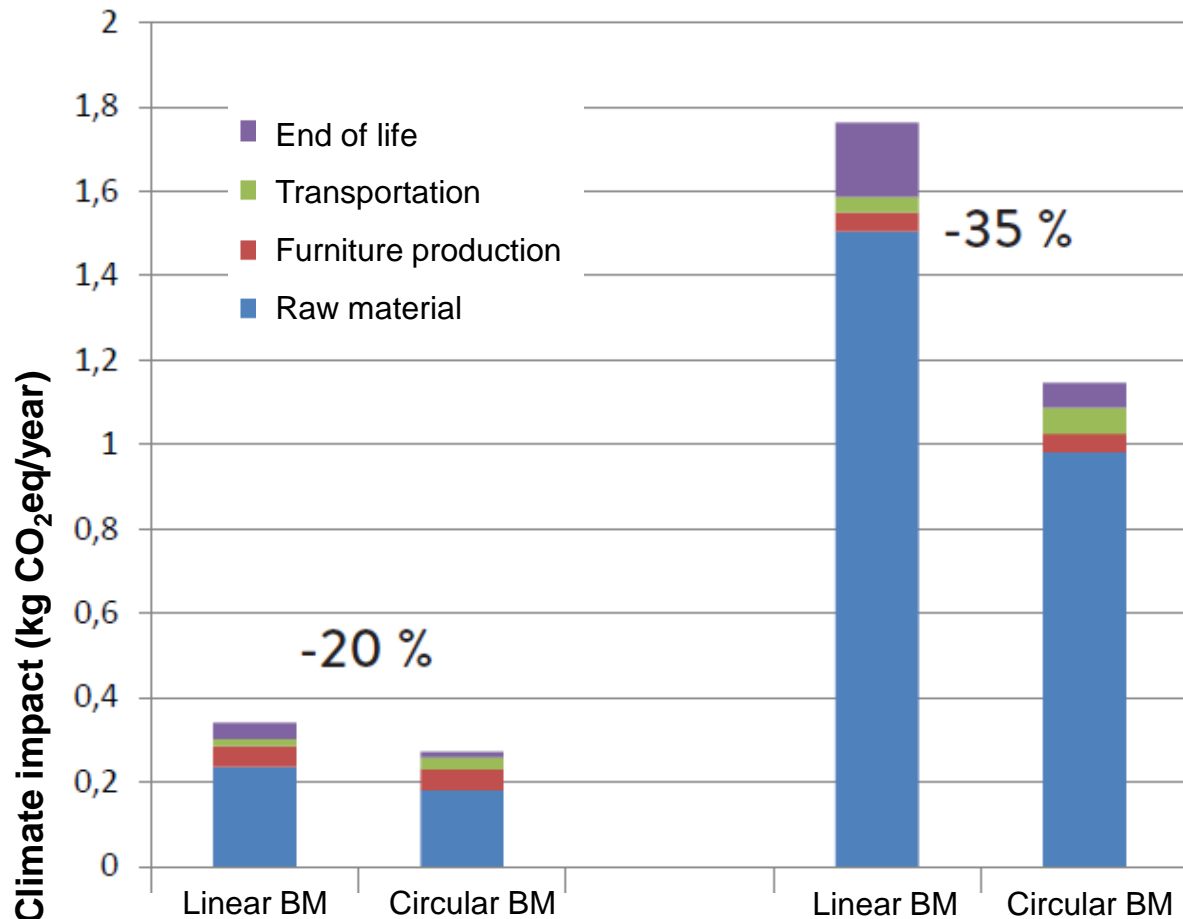


User and user acceptance

- Many layers of customers and users
- Acceptable with CBM?
- Option for higher rate of servification

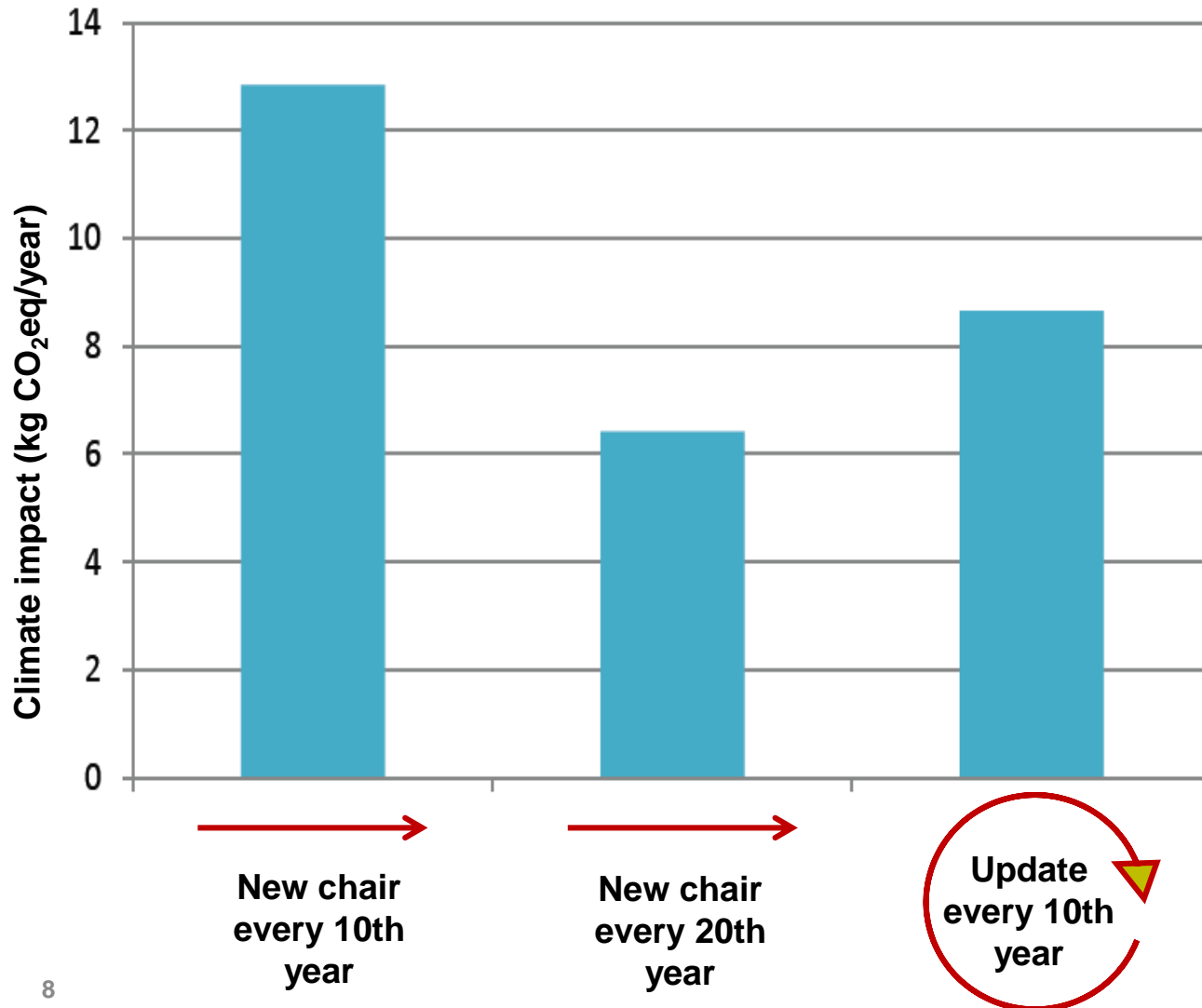


Environmentally better?



- Example of improvements
 - - 30% climate impact
 - - 50% use of material
- Large variations in result:
Could also be worse!

User behaviour impact



- Potential improvements vary with e.g.:
 - Product selection
 - Amount of service
 - Actual lifetime of product
- Very little knowledge on actual user behaviour

Conclusions

- User patterns greatly affect whether CBM will be environmentally better or not.
- Analysts need to take more care in user scenarios and user behaviour.
- Focus needs to be on prolonging the actual life time rather than the technical life time.



Reflections

- Whose responsibility? – Users, designers or business developers?
- Main environmental effect will be inspiration and influence in other areas?





THANK YOU

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