

How circular business models are developed in collaboration with third parties?



dr. ir. H.W.M. van Bommel

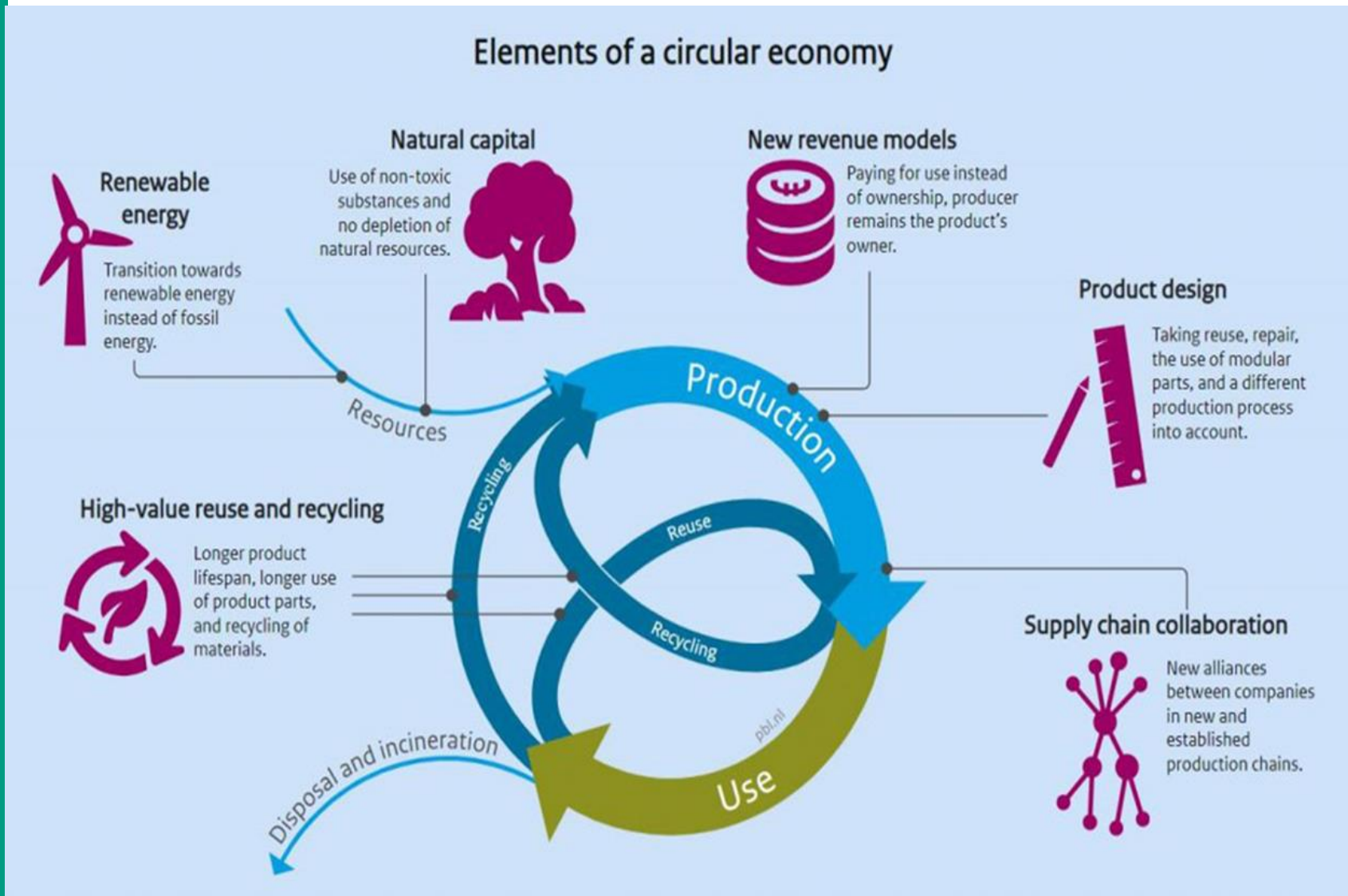
Senior Lecturer/Researcher
Circular Innovations

Program Manager of the
Fieldlab Circular Innovations in the
Manufacturing Industry

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A circular economy is an economic system of closed loops in which raw materials, components and products lose their value as little as possible, renewable energy sources are used and systems thinking is at the core

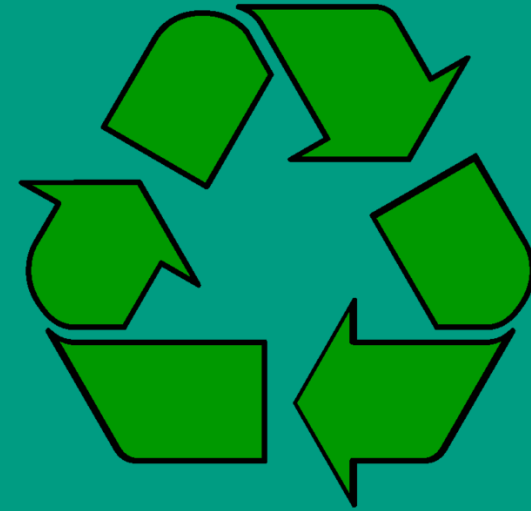


Why a Circular Economy?



- Present loops of materials leak at many places and these leakages cause environmental impacts
- Mining resources becomes more and more difficult and therefore more expensive
- Europe depends very much on import of resources from other continents and would like to be more independent

The goal is



close the loop of materials/resources used
in the production and consumption systems
in society in an efficient way

Interdisciplinary approach

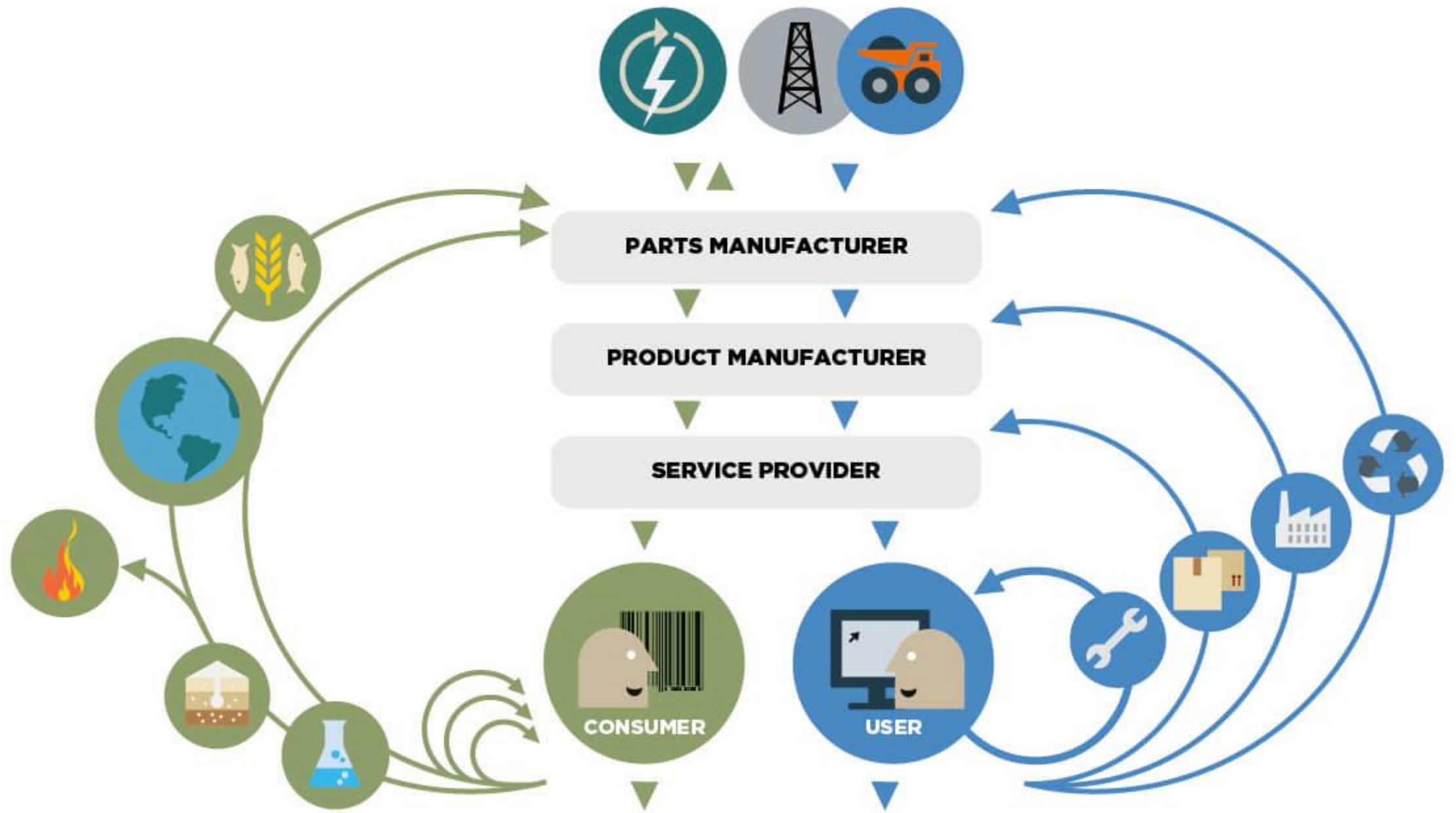
- The word Circular Economy (CE) suggests that it is an economic topic ?
- Other disciplines didn't feel it as their responsibility
- An interdisciplinary approach is needed
- That is why we (at Saxion) removed the word "Economy" and replaced it by "Innovations"

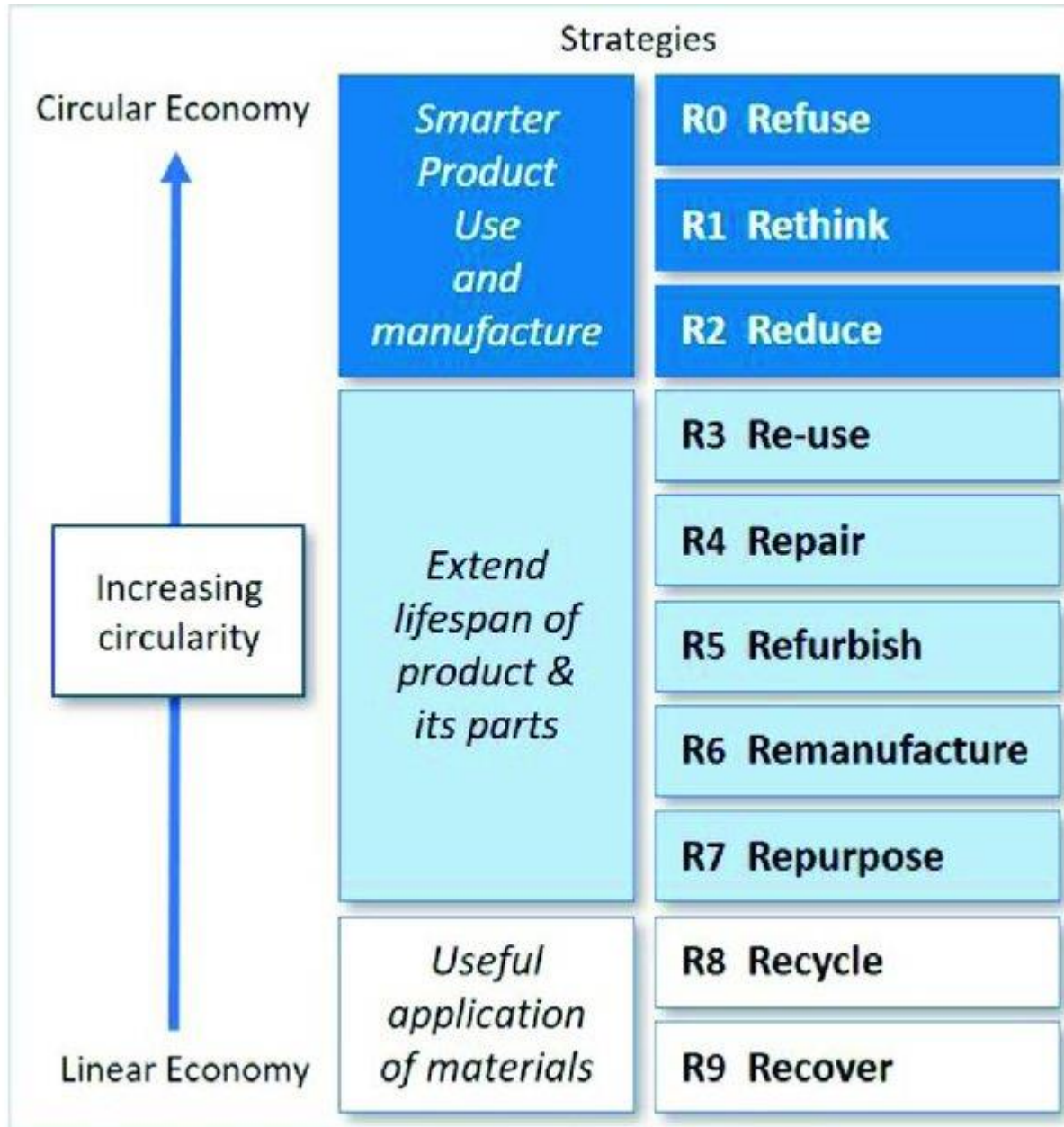
Interdisciplinary Students Projects

Saxion implemented an interdisciplinary semester (smart solutions semester) in the curricula of all the bachelor programs

Students from different programs work in mixed groups interdisciplinary on real-life business projects







R-Strategies

figure adapted from Potting et al. (2017)

Fieldlab Circular Innovations in the Manufacturing Industry

- 4 year program developed with support from regional government in the East of the Netherlands
- Applied research projects with medium sized industrial companies
- Feasability studies from technical and organizational perspective
- Researchers and students are involved
- Students work in interdisciplinary projects

Company produces and sells in the European market

Most of the clients are governments demanding more attention for sustainability and circularity

Research on:

- organizing the refurbishment (R5) of machines
- environmental analysis (LCA)
- service oriented business model

Research groups involved:
Technology Innovation Processes (TIP), Industrial Design and Business Models

Students and researchers involved

Snow Shovels and Salt Spreading Machines



Interdisciplinary Saxion Applied Research Program Circular Innovations for the future

- the fieldlab is a temporary program and will stop
- cooperation between research groups will be continued and improved
- development of interdisciplinary applied research proposals for circular innovations in industry
- financed by national and EU funds
- always looking for cooperation with industries and other universities

Questions?

Harrie van Bommel

h.w.m.vanbommel@saxion.nl

