



# CIRC4LIFE

## SUSTAINABLE BUSINESS MODELS AND CIRCULAR ECONOMY

Presented by [...]  
[Date]



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 776503

# Basic information about CIRC4Life



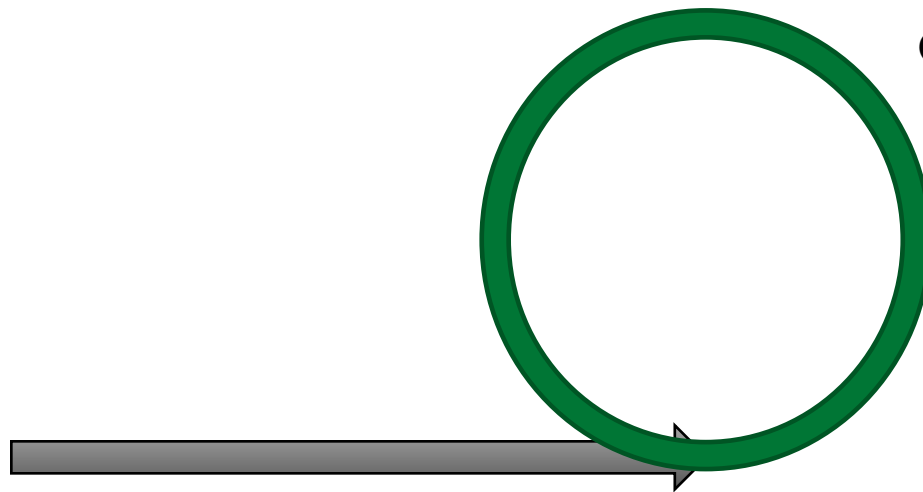
- CIRC4Life is a Horizon 2020 project with the aim to develop and implement a circular economy approach for sustainable products and services through their value and supply chains
- The new circular economy business models will be demonstrated at a large scale in four industrial areas: Domestic and industrial lighting products, Vegetable farming and food, Meat supply chain, and Recycling and reuse of computer tablets. An ICT platform will be developed to support the development, implementation, demonstration, and communication
- Coordinator Nottingham Trent University
- Partner organisations

Enviro Data (ENV), Jonathan Michael Smith (JS), Kosnic Lighting Limited (KOS), Centre of Research for Energy Resources and Consumption (CIR), European EPC Competence Center GmbH (EECC), The Institute for Ecology of Industrial Areas (IETU), RISE IVF AB (SWE), Make Mothers Matter (MMM), ONA PRODUCT (ONA), INDUMETAL Recycling (IND), GSI Germany GMBH (GSI G), Laurea University of Applied Science (LAU), Center for European Policy Studies (CEPS), Institute of Communication and Computer Systems (ICCS), Recyclia (REC), S.A.T.Alia (ALIA)

- Content specific for this module tool produced by RISE



# LINJEAR VS. CIRCULAR ECONOMY



## Linear economy

- Take-make-consume-disposal
- High material use intensity
- High value loss

## Circular Economy (CE)

- Closed-loop systems
- Value creation decoupled from resource consumption
- High value capture

# DEFINITION(S)

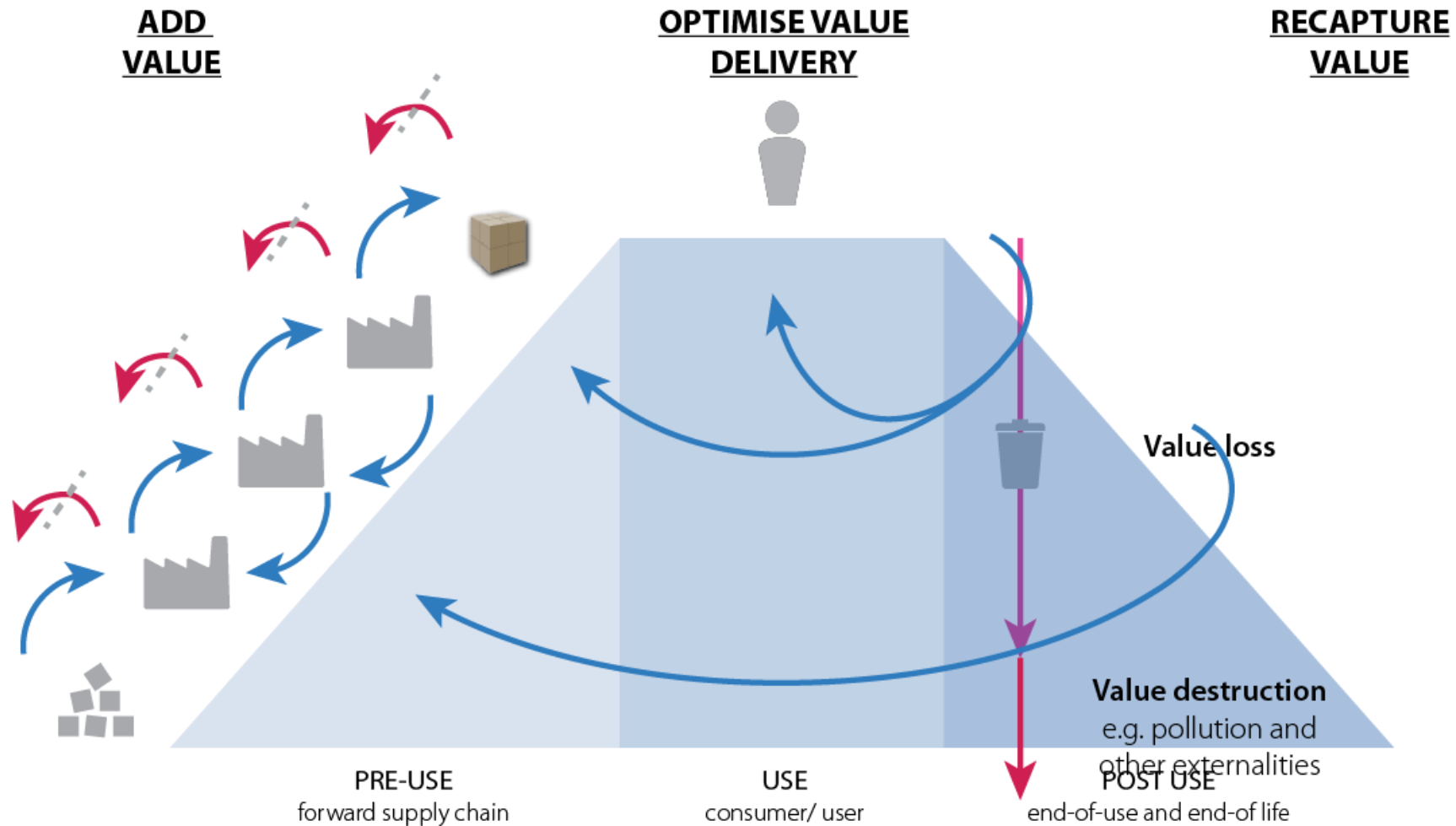


*“A circular economy describes an economic system that is based on business models which replace the ‘end-of-life’ concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations.”<sup>[a]</sup>*

Kirchherr et al. (2017)

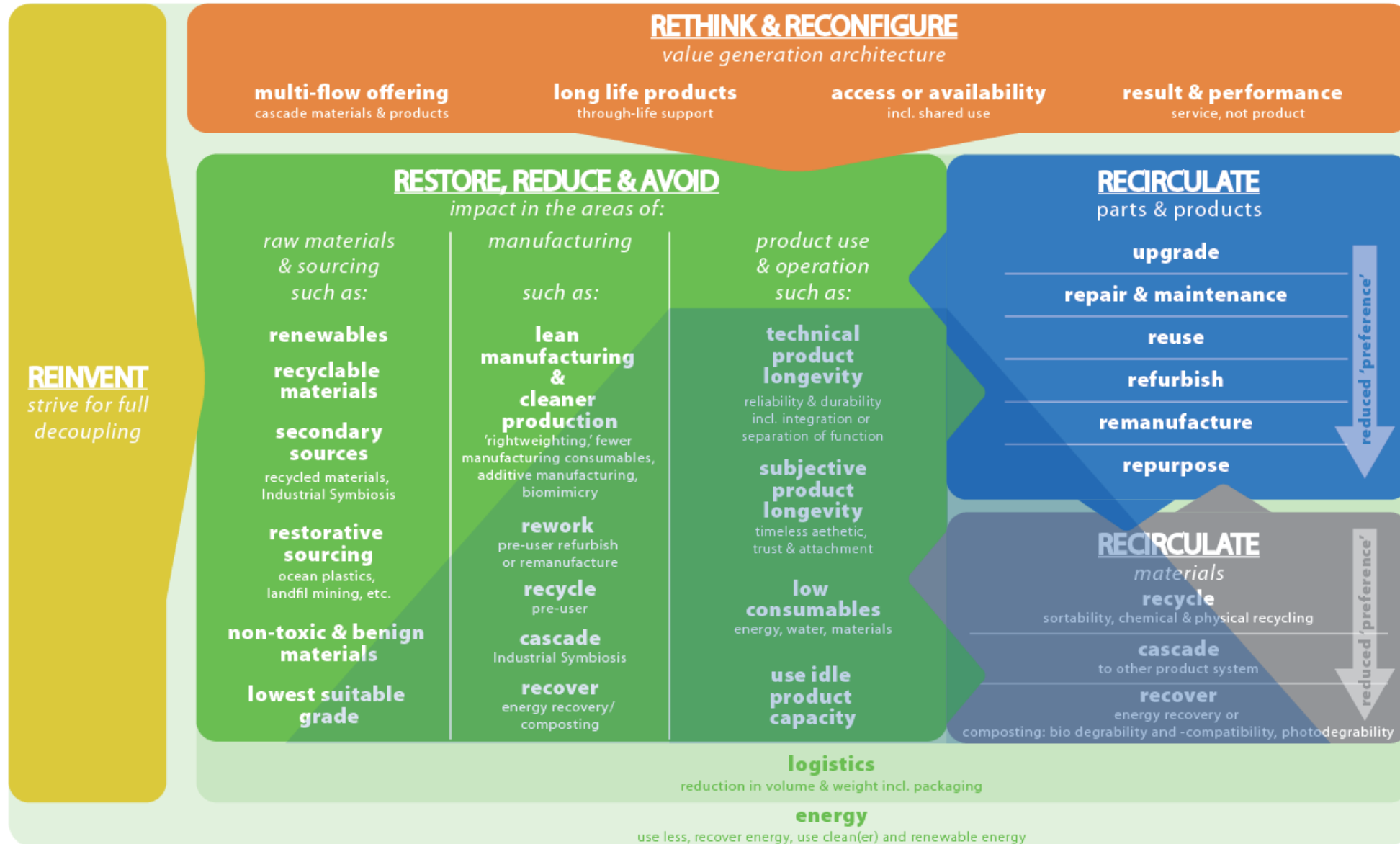
One of many definitions

# VALUE IN THE PRODUCT LIFE CYCLE



# THE CIRCULARITY SCANNER

Material produced in  
CIRCit [www.circitnord.com](http://www.circitnord.com)



# SEVERAL FRAMEWORKS AVAILABLE



**Linear economy**

Increased circularity

Useful application of materials

Extended life span of the product and its parts

Smarter product use and manufacture

**R0. Recovery**

- Incineration of material with energy recovery

**R1. Recycling**

- Process materials to obtain the same (high) grade or lower grade quality

**R2. Repurpose**

- Use discarded product or its parts in a new product with a different function

**R3. Remanufacture**

- Use parts of discarded product in a new product with the same function

**R4. Refurbish**

- Restore an old product and bring it up to date

**R5. Repair**

- Repair and maintenance of defective product so it can be used with its original function

**R6. Reuse**

- Reuse by another consumer of discarded product which is still in good condition and fulfils its original function

**R7. Reduce**

- Increase efficiency in product manufacture or use by consuming fewer natural resources and materials

**R8. Rethink**

- Make product use more intensive (e.g. by sharing product)

**R9. Refuse**

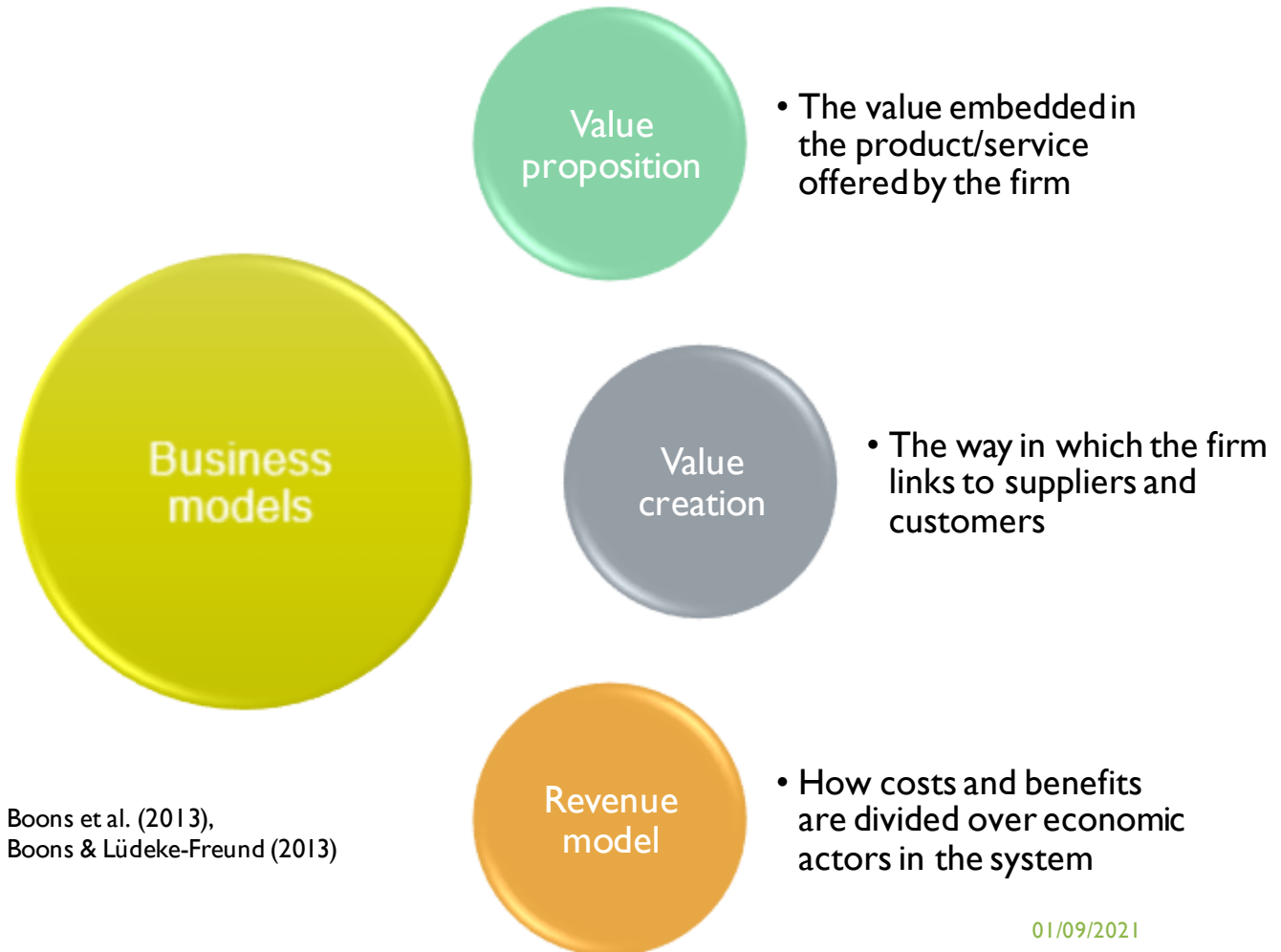
- Make product redundant by abandoning its function or by offering the same function with a radically different product

**Circular economy**

# THE BUSINESS MODEL



- Specifies how a company aims to make its money from products and services
- Successful companies need to combine at least 3 elements in their business models



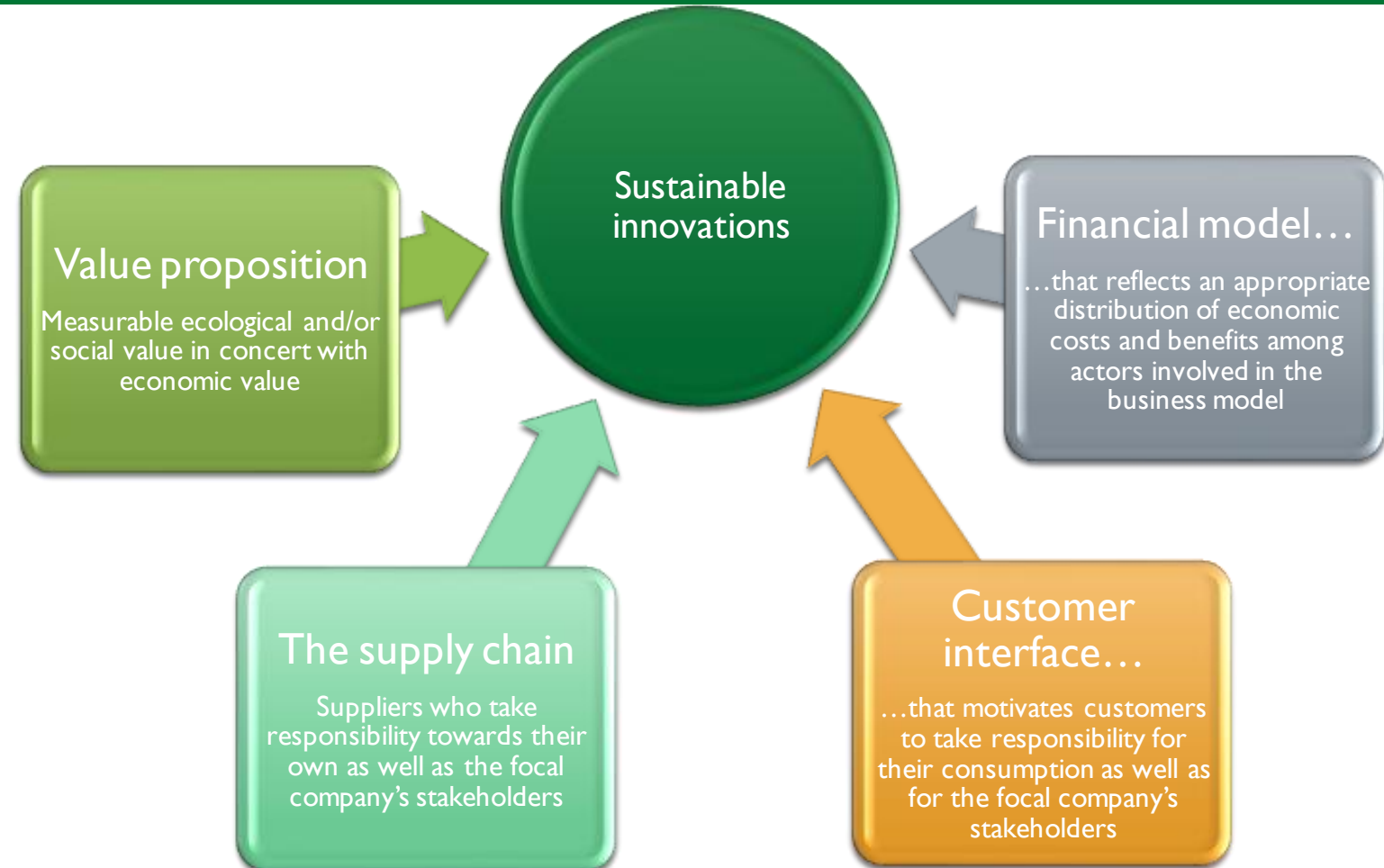
Boons et al. (2013),  
Boons & Lüdeke-Freund (2013)



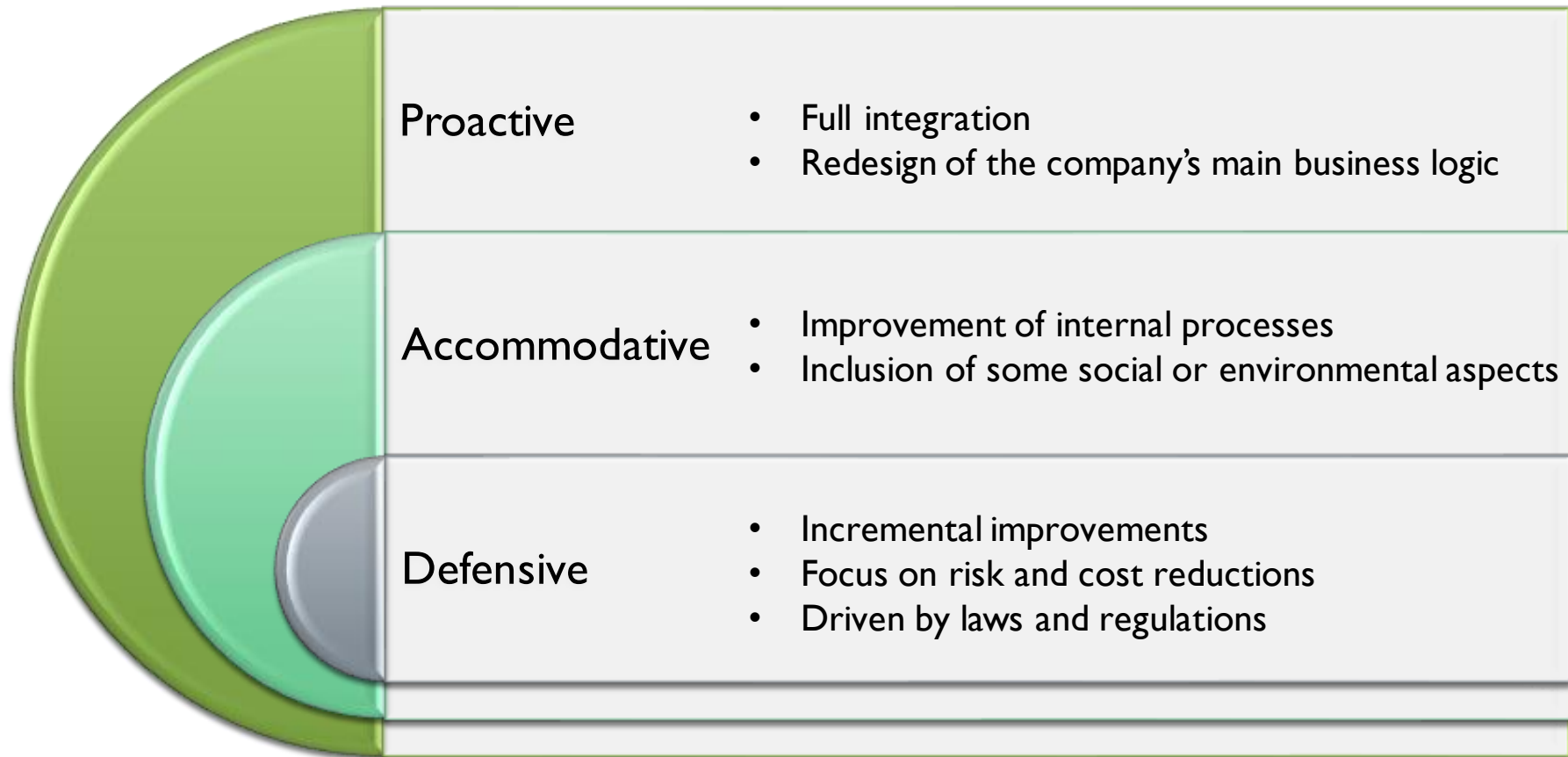
# BUSINES MODEL INNOVATION



- Aspects needed for successful marketing of sustainable innovations



# 3 LEVELS OF SUSTAINABLE BUSINESS MODEL INNOVATION



# 3 TYPES OF SUSTAINABLE BUSINESS MODEL INNOVATION



## Technical

Mainly technical innovation

- E.g. manufacturing processes and product redesign

## Social

Mainly social innovation

- E.g. innovations related to customer offers and changed consumer behavior

## Organizational

Mainly organizational innovation and change management

- E.g. changed corporate responsibility

# 8 TYPES OF BUSINESS MODELS FOR SUSTAINABILITY



## Technical innovation

Changes manufacturing processes  
and product design

## Social innovation

Innovations related to customer offers  
and changes consumer behaviour

## Organizational innovation

Changed company responsibility

Bocken et al. (2014)



# 8 TYPES OF BUSINESS MODELS FOR SUSTAINABILITY

## Technical innovation

Changes manufacturing processes and product design

Maximize material and energy efficiency

E.g. low energy processes, lean

Create value from waste

E.g. industrial symbiosis, reuse, recycling, remanufacture

Substitution

E.g. solar power, wind power

## Social innovation

Innovations related to customer offers and changes consumer behaviour

Function rather than ownership

E.g. leasing models

To take a stewardship role

E.g. FairTrade

Encourage moderation

E.g. slow fashion, decreased consumption

## Organizational innovation

Changed company responsibility

Sustainability as core business focus

E.g. micro financing, base of the pyramid

Scale up solutions

E.g. innovation platforms, franchising

Bocken et al. (2014)

# REFERENCES



- Blomsma, F., Pieroni, M., Kravchenko, M., Pigosso, D. C., Hildenbrand, J., Kristinsdottir, A. R., ... & Li, J. (2019). Developing a circular strategies framework for manufacturing companies to support circular economy-oriented innovation. *Journal of Cleaner Production*.
- Bocken, N. M., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*.
- Boons, F., Montalvo, C., Quist, J., & Wagner, M. (2013). Sustainable innovation, business models and economic performance: an overview. *Journal of Cleaner Production*.
- Boons, F., Lüdeke-Freund, F., (2013). Business models for sustainable innovation: State-of-the-art and steps towards a research agenda. *Journal of Cleaner Production*.
- Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation and Recycling*.
- Schaltegger, S., Lüdeke-Freund, F., Hansen, E. (2012). Business cases for sustainability: The role of business model innovation for corporate sustainability. *International Journal of Innovation and Sustainable Development*.



# WORKSHOP

TOWARDS SUSTAINABLE  
CIRCULAR ECONOMY



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# WORKSHOP AIM



- Increased knowledge of options for developing more sustainable products/processes
- Enhanced understanding of the potential of circular business opportunities for your company



# WORKSHOP PARTICIPANTS



Company A

Company B

Company C

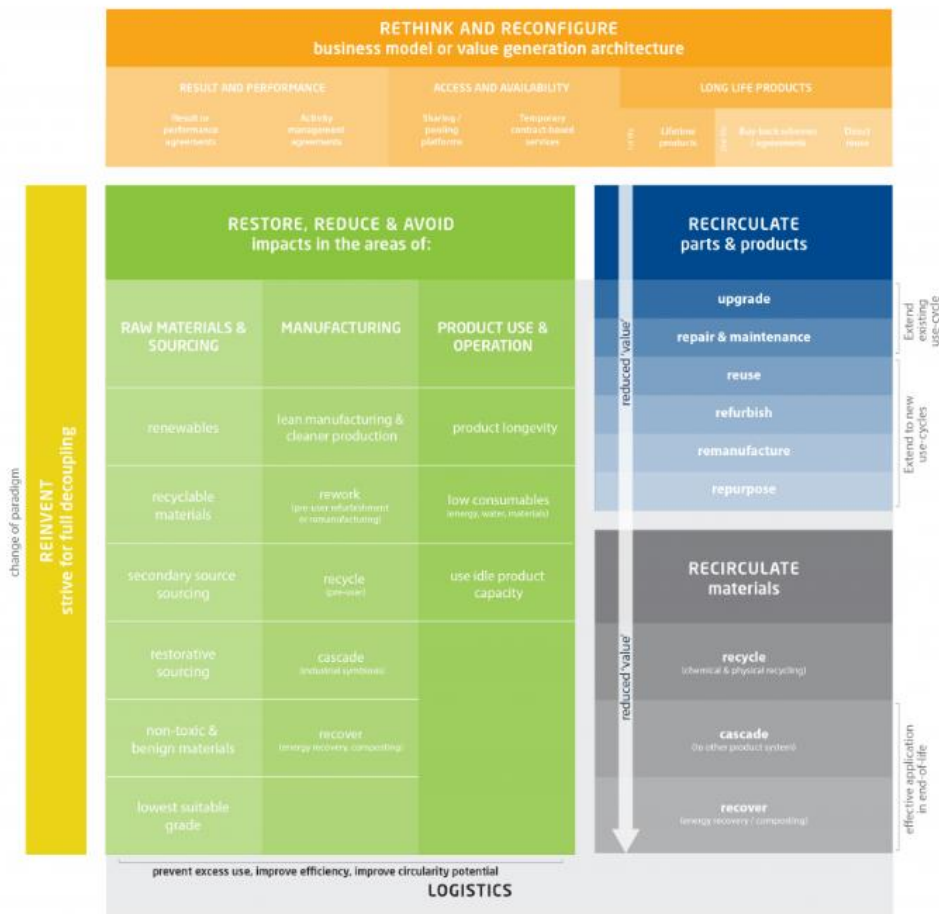
Company D

# WORKSHOP STRUCTURE



- Group work in X groups (x people in each group)
- Pick one business case as workshop example
  - E.g. a product or service that you offer
- Draw a simplified flowchart of the involved actors and material/product flows
- Discuss alternative circular business models based on the selected business case based on 4 questions (upcoming slide)

# WORKSHOP ASSIGNMENT



- What type of possibilities and challenges do you identify for your organization in relation to circular economy?
  - What actions are your customers / competitors taking?
- Which new (sustainable) business models could work for your company?
- What new roles appear in a circular economy? Which might disappear? What new collaborations can / should be created?

# WORKSHOP CONCLUSIONS



- [To add during or after the workshop]

THANKS





## PRESENTER CONTACTS

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