

Den cirkulär ekonomin från idé till praktik: möjligheter och problem

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Recycling dagen,

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Helsingborg,



Ett brett stöd

- **Folkrepubliken Kina**
- **Europeiska Unionen**
- **World Commission on Environment and Development**
- **World Economic Forum**
- **IKEA, H&M, Renault, Danone, Philips, Google, Unilever, Sun, Nike, Intesa Sao Paolo, ...**





- **The circular economy will boost the EU's competitiveness by protecting businesses against scarcity of resources and volatile prices, helping to create new business opportunities and innovative, more efficient ways of producing and consuming.**
- **It will create local jobs at all skills levels and opportunities for social integration and cohesion.**

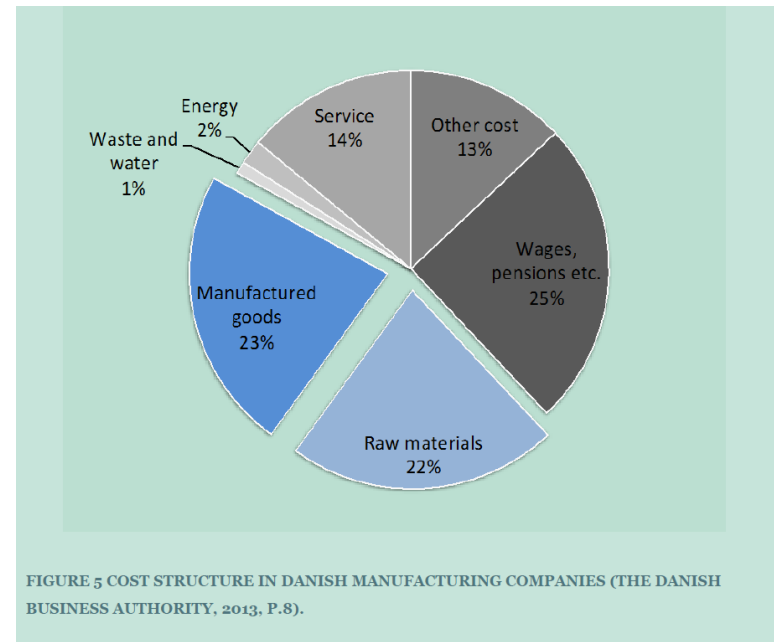


Två andra anledningar

- Säkerhet

- Kontroll av input –
volym och pris

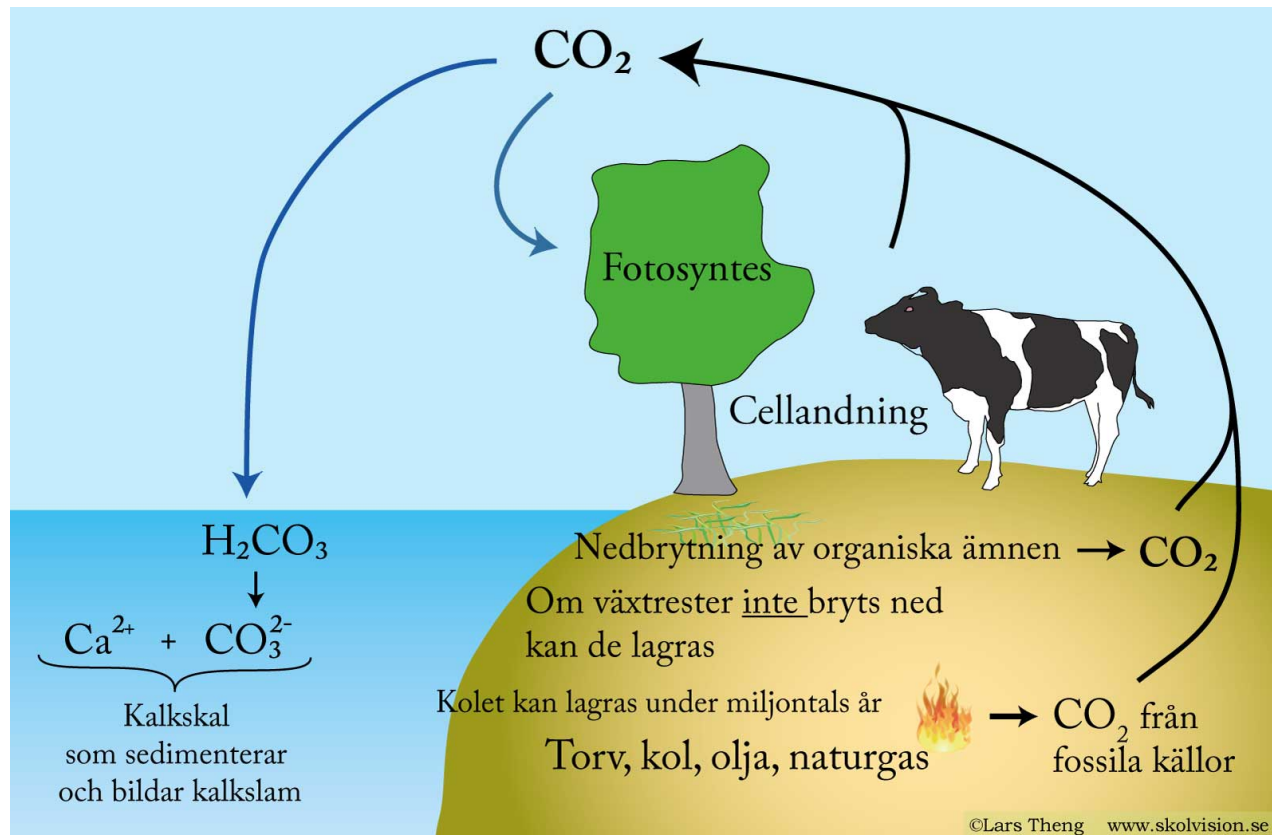
Rare Metals in a smart phone



Varifrån kommer idén?

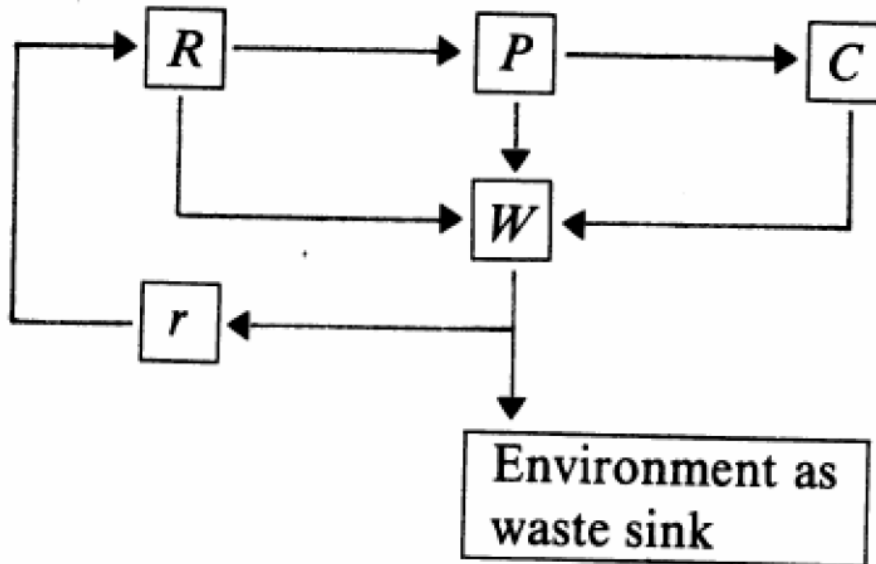
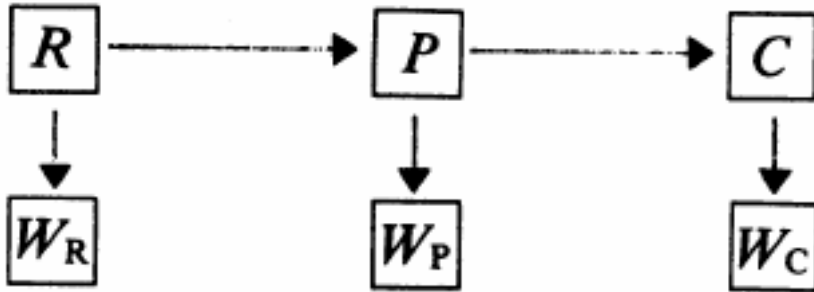
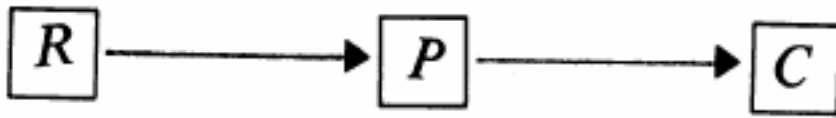


Kretsloppstänkandet



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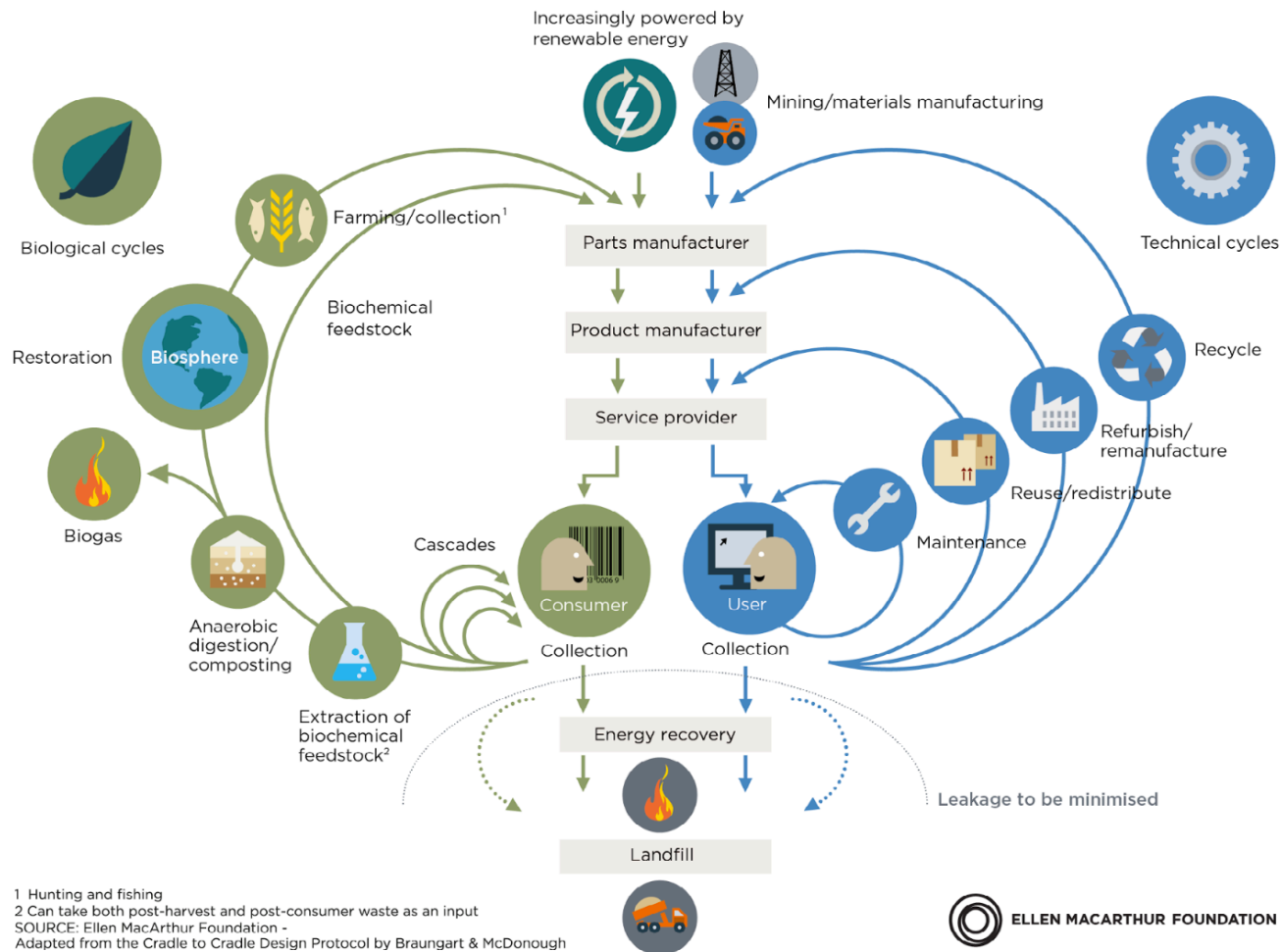


Pearce and Turner 1990

R: Resource; P: production; C:
consumer goods; W: waste; r:
recycling



“An industrial system that is restorative by design”

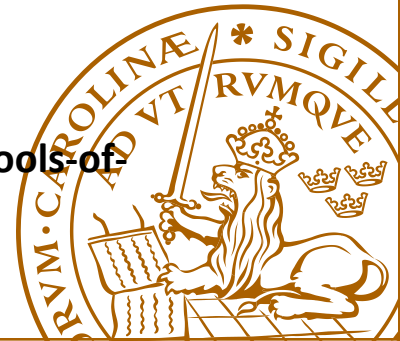


Tankeskolor

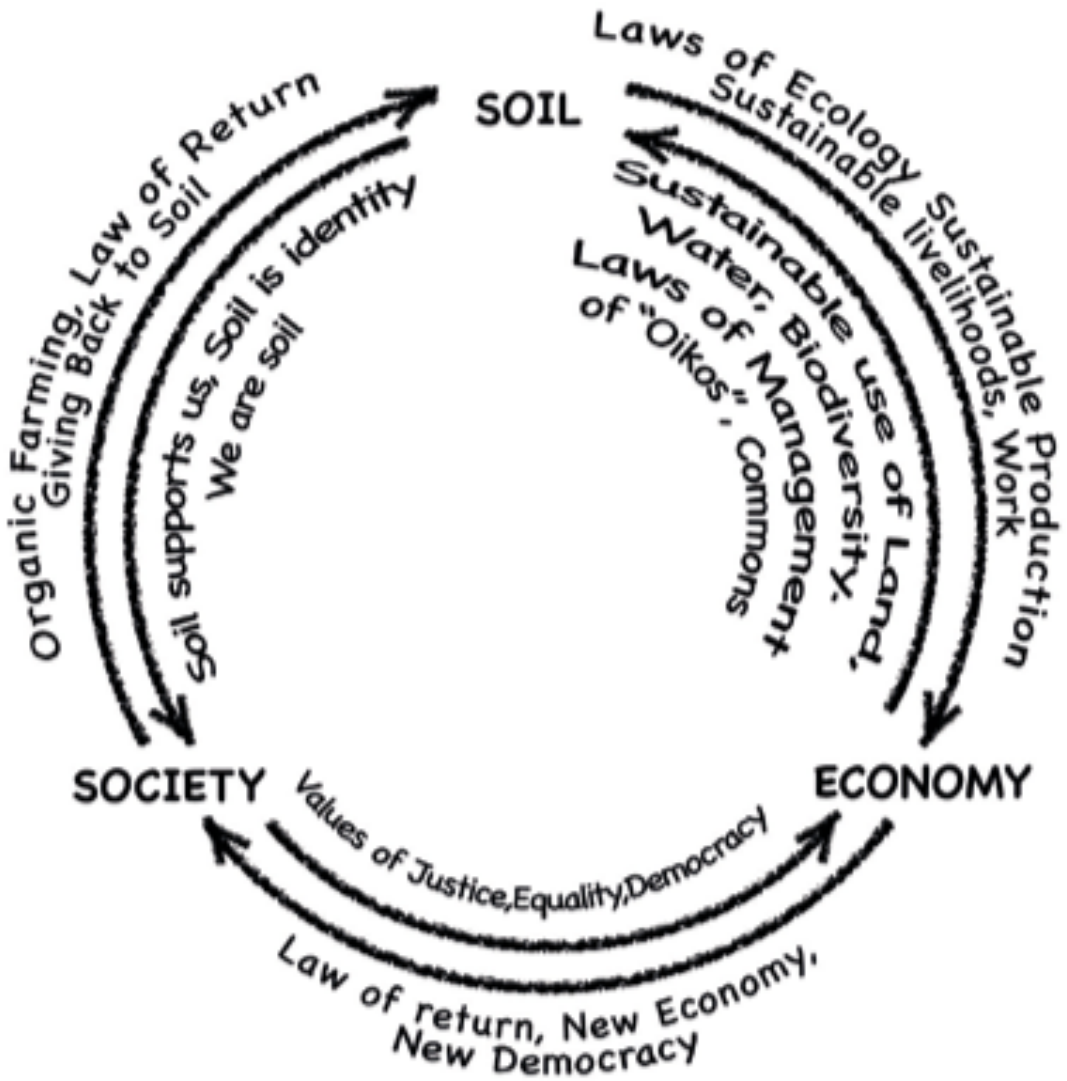
(Ellen Mac Arthur Foundation)

- Cradle to Cradle
- Performance economy
- Biomimicry
- Industrial Ecology
- Natural Capitalism
- Regenerative Design
- Cascaded uses

<https://www.ellenmacarthurfoundation.org/circular-economy/concept/schools-of-thought>



Vandana Shiva (2017)



http://www.europarl.europa.eu/cmsdata/115353/Speech%20Vandana%20Shiva_EN.docx



The circular logic of Law of Return, mutuality, reciprocity and regeneration

Cirkulära affärsmodeller

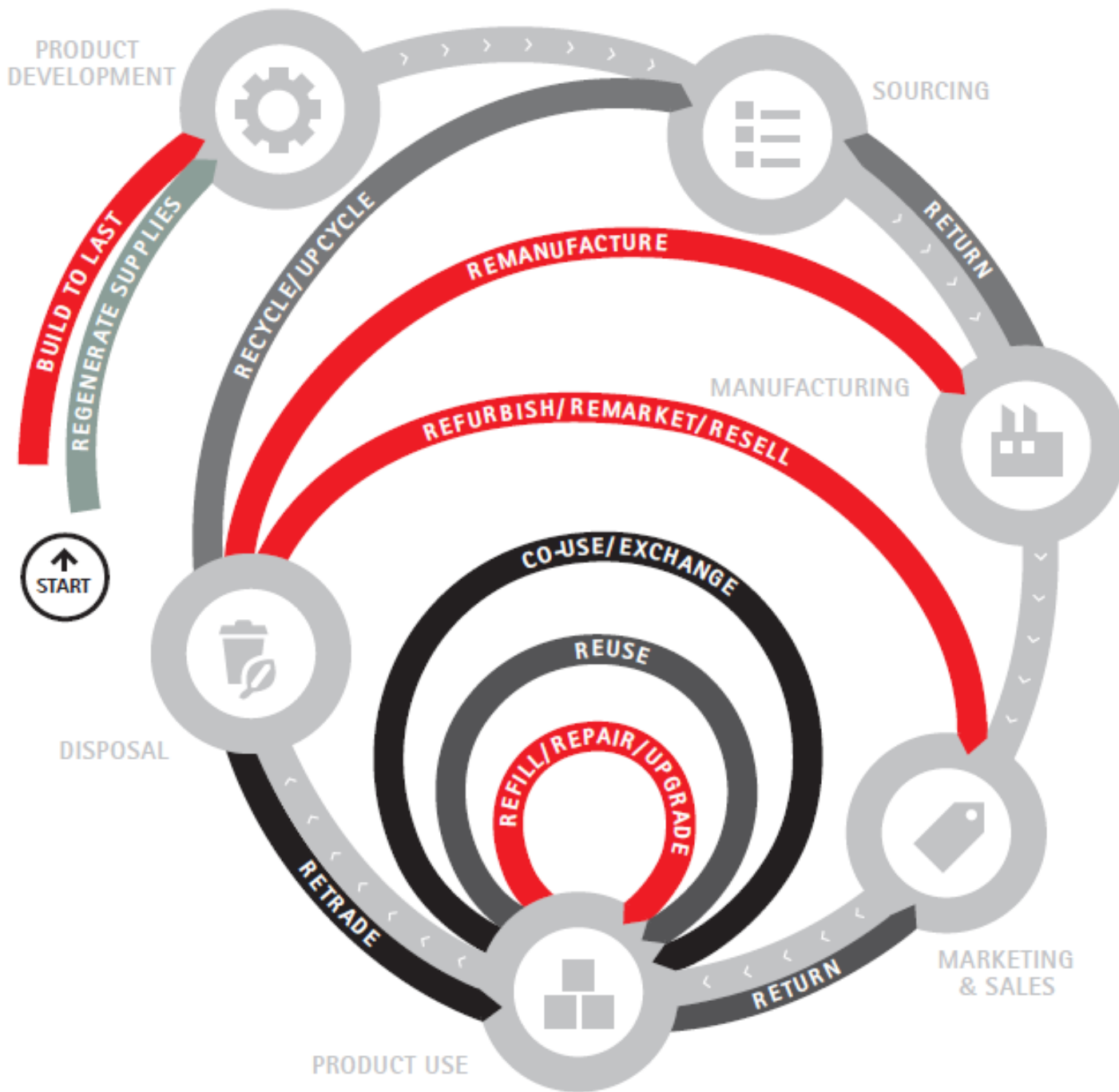


5 generiska affärsmodeller

1. Circular Supply-Chain
2. Recovery & Recycling
3. Product Life-Extension
4. Sharing Platform
5. Product as a Service

Lacy P and Rutqvist J. (2015) *Waste to wealth: The circular economy advantage*, Basingstoke: Palgrave Macmillan.





-  CIRCULAR SUPPLY-CHAIN
-  RECOVERY & RECYCLING
-  PRODUCT LIFE-EXTENSION
-  SHARING PLATFORM
-  PRODUCT AS A SERVICE

Lacy & Rutqvist (2015)



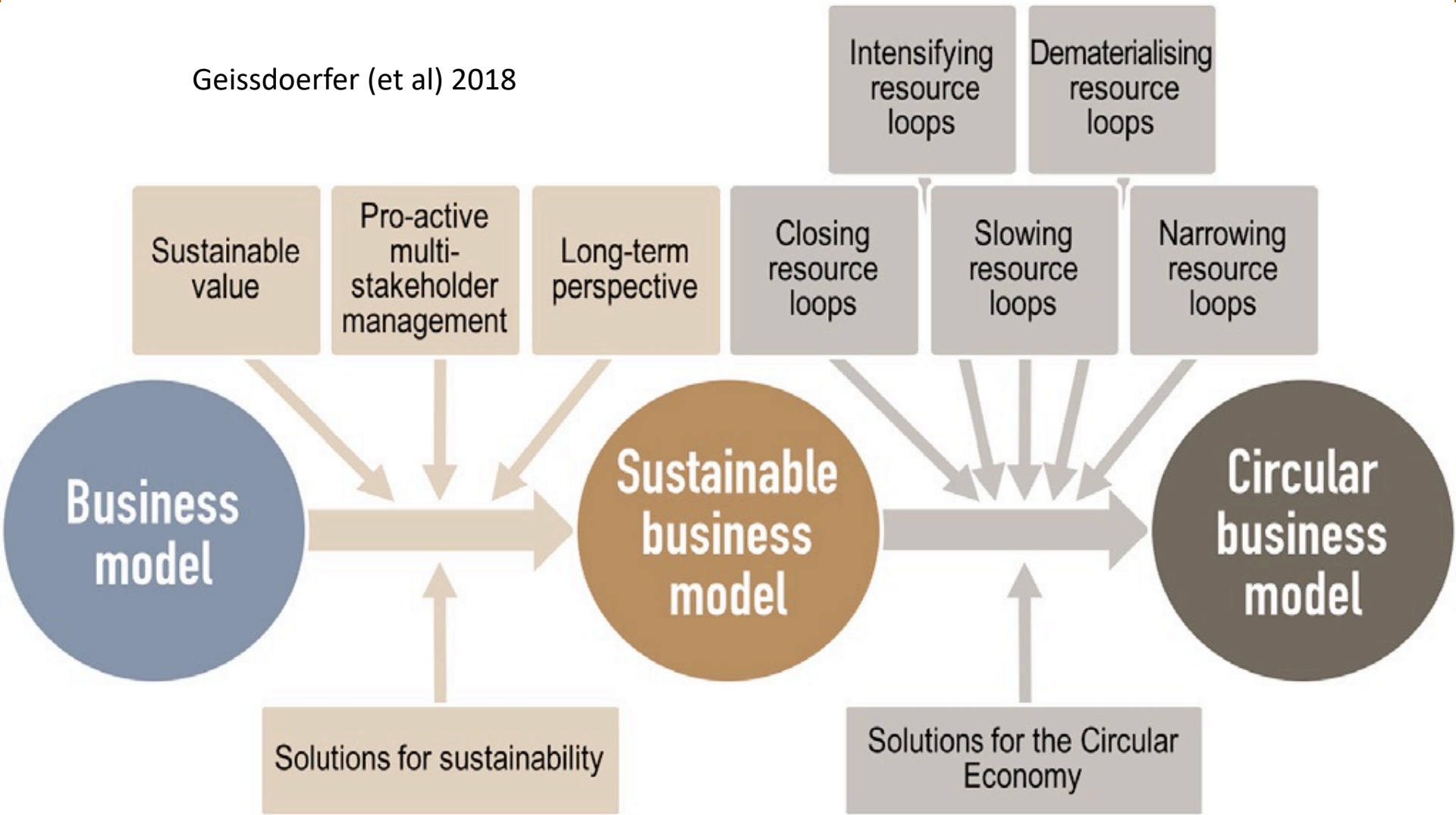
Slowing and Closing

- *Slowing* refers to prolonging the use and reuse of goods over time:
 - design of long-life products,
 - product life extension techniques (e.g., repair, and refurbishing)
 - pay-per-use or time-based solutions
- *Closing* refers to returning products to production after use:
 - thanks to reverse logistics that take products back from consumers to producers
 - reuse materials through recycling.



Comparison of traditional, sustainable, and circular business models

Geissdoerfer (et al) 2018



Några problem



Saknas

Energi



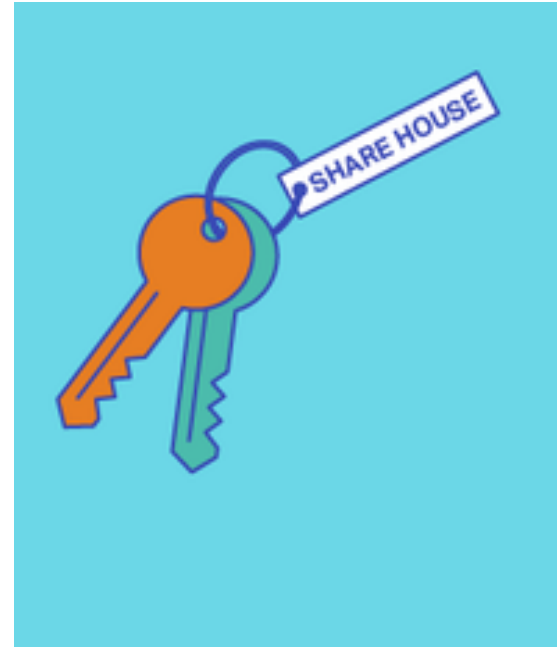
Tid



Rum



Saknas



Sociala normer



Saknas



**Producentmakt
och
konsumentskydd**



Saknas



CASE STUDY:
ABN AMRO PAVILION



The Circular Pavilion in Amsterdam creates an accessible entrance to the existing head office of the ABN AMRO bank and contains conference and catering facilities. ABN AMRO developed the building together with BAM, Architects CIE and co-makers and consultants. The circular pavilion of ABN AMRO is engineered with the aim that all 'lights are green' to continue to (re)use the materials in the future. The building is almost completely remountable. A lot of elements consist of virgin material, which have been selected for low environmental impact. There are reused components integrated into the building and interior design, e.g. Inner walls, doors, cables and fire hose reels, and also old jeans, collected from ABN AMRO employees, which have been used to produce acoustic ceilings.

Design and production are no longer considered separately from each other. It is a process in itself to select the best co-creators and partners. This collaborative approach leads to a better utilisation of expertise.

“The value proposition for the ABN pavilion is that we want to experiment with the circular economy how it works in the built environment and learn from the challenges we run into. The real impact is created by sharing these lessons and inspiring our clients to start with the circular economy.”

Mark van Rijt, ABN AMRO

Hur många varv?



Saknas



Reaktioner från linjära lösningar



En (ledande) fråga som slutsats



**Den cirkulära ekonomin är en
modell för perfekta materiella
flöden.**

**Men kan materiella flöden blir
perfekta?**



Frågor till er

- **Varför tror ni att den CE blivit så populärt?**
- **Vad uppfyller den för tom håll?**
- **Vad betyder den cirkulära ekonomin för dig?**
- **Vad ser ni för problem och möjligheter med den cirkulära ekonomin?**



Tack för er uppmärksamhet

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Bilagor



Examples of circular economy business models

- Hire & Leasing
- Performance/Service System
- Incentivised Return
- Asset Management
- Collaborative Consumption
- Long Life



ReSOLVE-framework

Six actions that firms can undertake not to let the value of goods and materials fall to zero and become waste:

1. Regenerate,
2. Share,
3. Optimize,
4. Loop,
5. Virtualize
6. Exchange.

Heyes, G., Sharmina, M., Mendoza, J. M. F., Gallego-Schmid, A., & Azapagic, A. (2018). Developing and implementing circular economy business models in service-oriented technology companies. *Journal of Cleaner Production*, 177, 621-632.



Pearce and Turner 1990

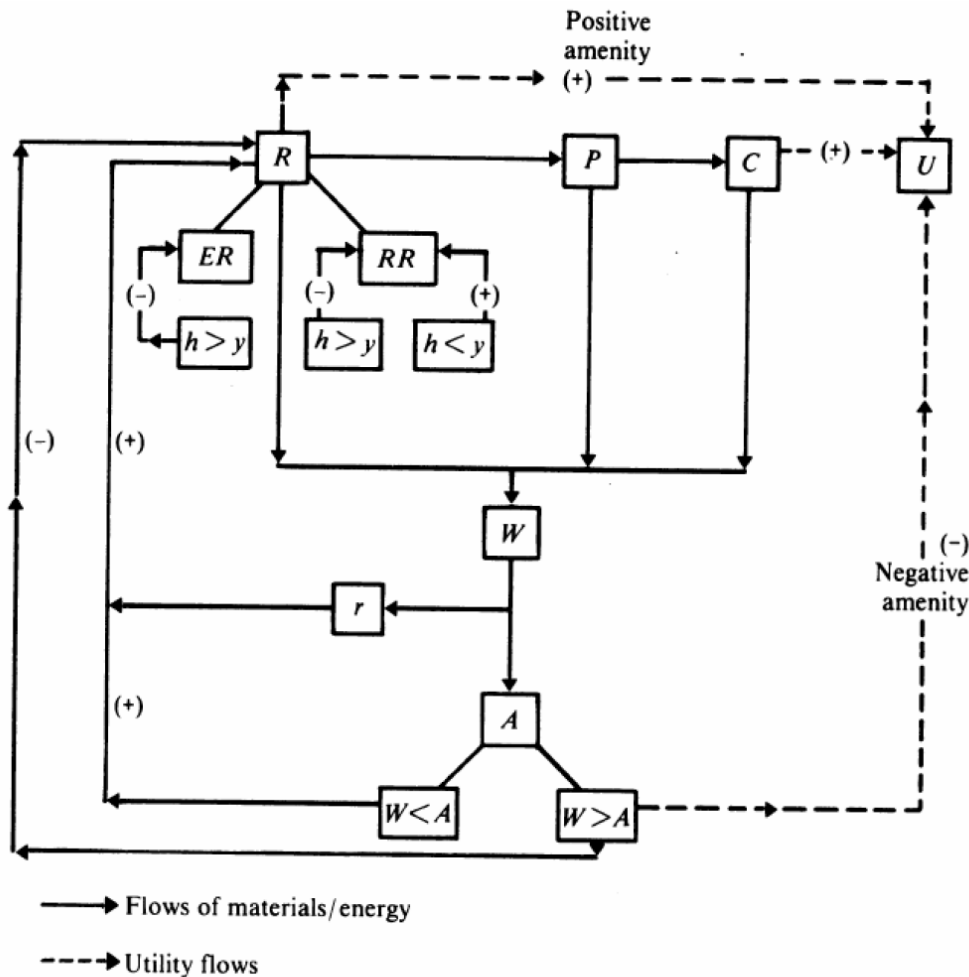
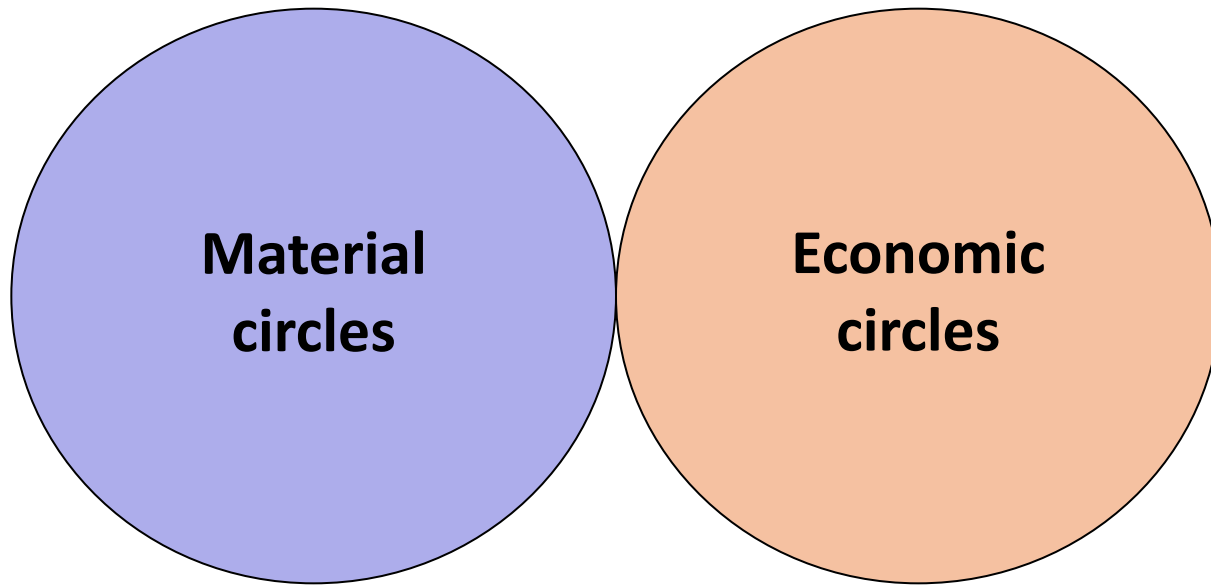


Figure 2.4 The circular economy.

R: Resource; P: production; C: consumer goods; U: utility; W: waste; r: recycling; ER: Exhaustible resources; RR: Renewable resources; if $h < y$ the resource stock grows, and if $h > y$ the stock falls; A: assimilative capacity



Circular + Economy



Tack för er uppmärksamhet

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