

SUSTAINABLE PROCESSES

CIRCULAR ECONOMY

Juan Antonio Ferriz-Papi





What's happening?

LINEAR ECONOMY



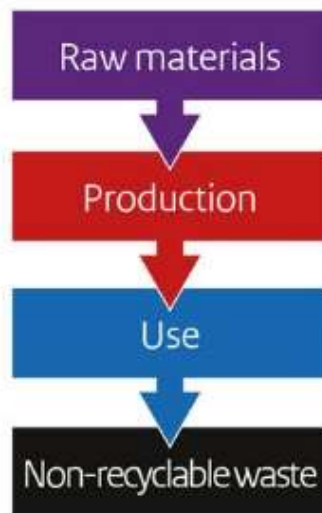
We act as if we had infinite resources...

... but the truth is that we don't.



From a linear to a circular economy

Linear economy



Reuse economy



Circular economy





WORKING CIRCULAR

Reduce, reuse, recycle (3R's)





WORKING CIRCULAR

Zero waste

THE WASTE HIERARCHY



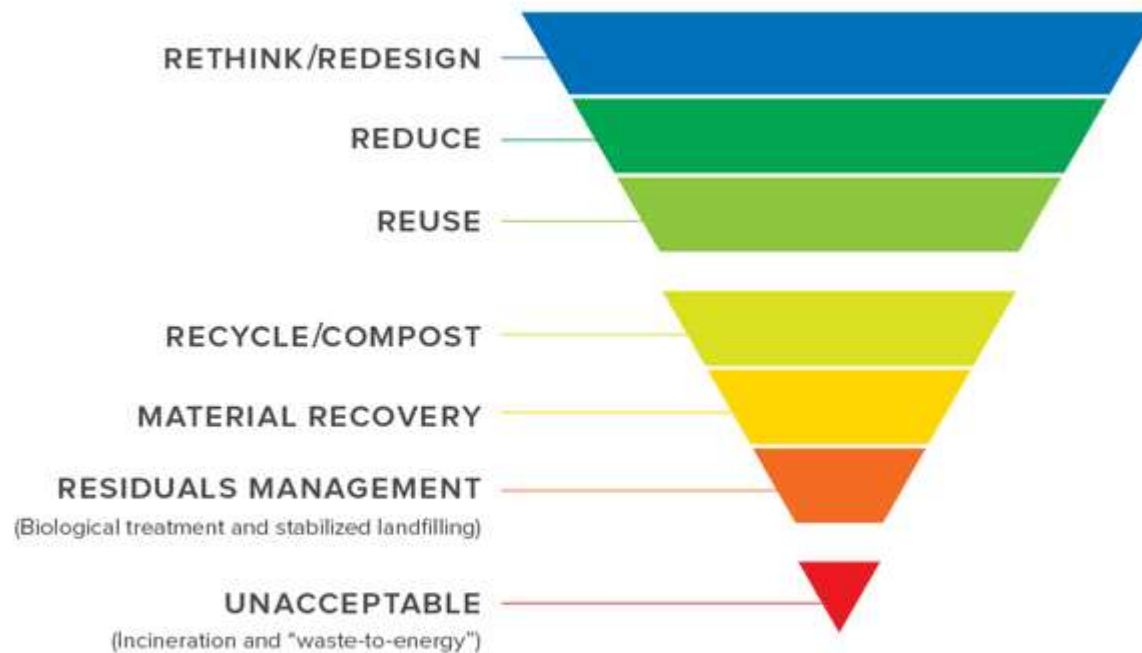
From here...



WORKING CIRCULAR

Zero waste

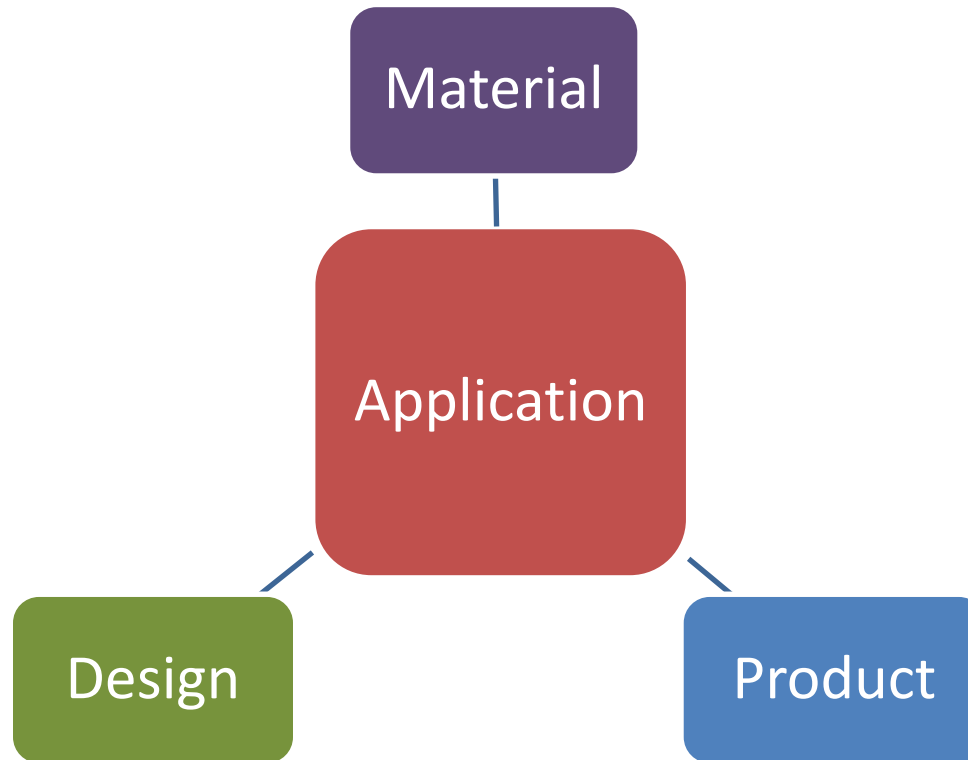
THE ZERO WASTE HIERARCHY 7.0





WORKING CIRCULAR

Creating value from waste

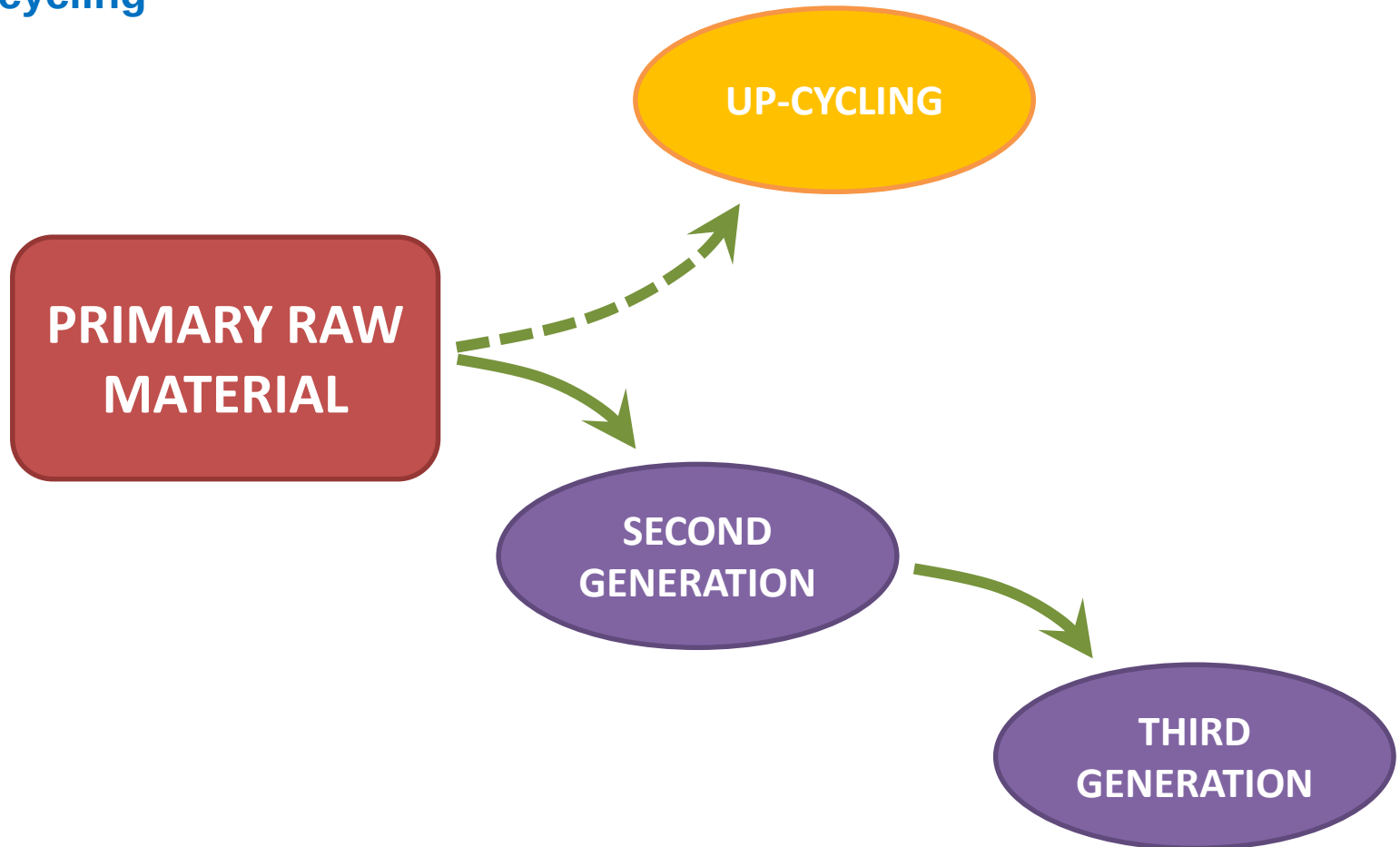


https://www.youtube.com/watch?v=qh_Z3wBV9O8



WORKING CIRCULAR

Up-cycling





LINES OF IMPROVEMENT

Servitisation

- Creating value by adding services to products or even replacing a product with a service
- Creation of product-service systems (PSS)
- Customer-oriented functions and outcomes
- Break the link between growth and material consumption





LINES OF IMPROVEMENT

Servitisation

Examples

- Digitisation
- Big data
- Delivery
- Training
- Inspection and maintenance
- Update
- Repair/change





LINES OF IMPROVEMENT

Reverse logistics

- Operations related to the reuse of products and materials
- Any process after the sale of the product is considered

3 components:

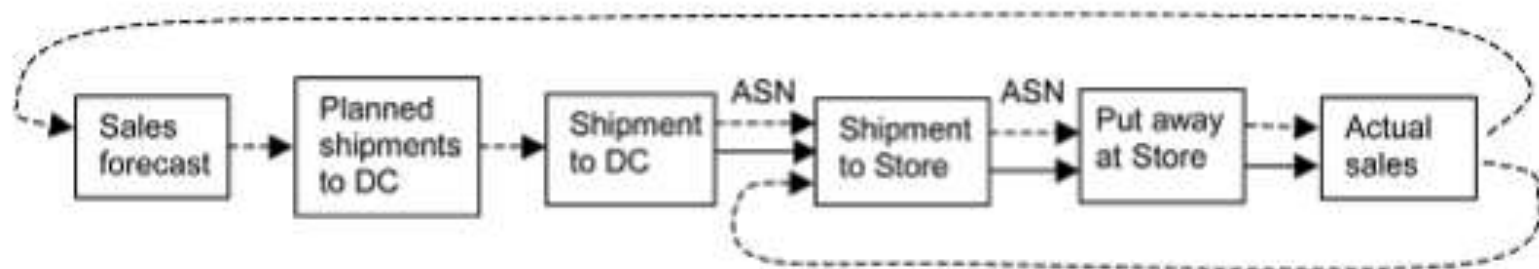
- Return policy and procedure (RPP)
- Remanufacturing or refurbishment (ROR)
- Waste disposal (WAD)



LINES OF IMPROVEMENT

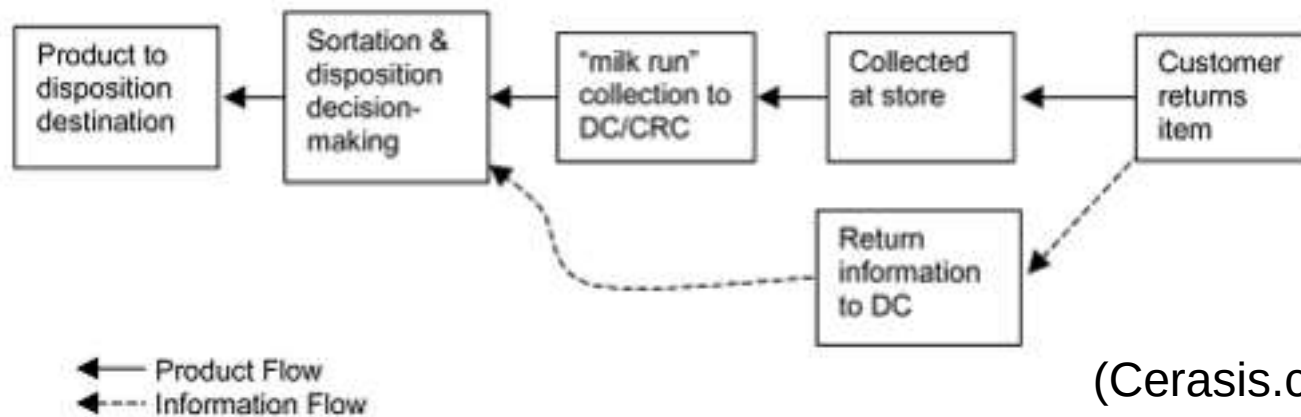
Example of Shipping

TRADITIONAL LOGISTICS



DC (Distribution Centre)
ASN (Advanced Shipping Notices)

REVERSE LOGISTICS



(Cerasis.com, 2019)



LINES OF IMPROVEMENT

Reverse logistics

How can it be improved?

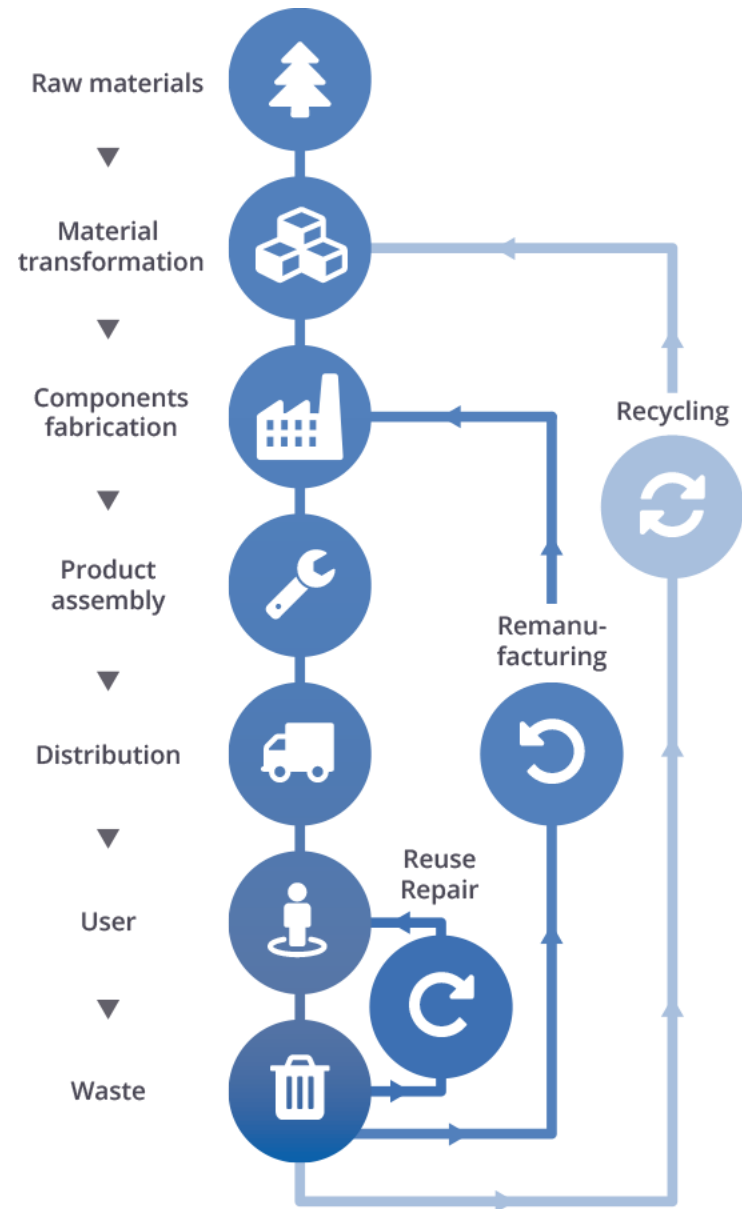
1. Increase longevity of products.
2. Minimize returns by ensuring the quality of the product.
3. Design and implement an effective returns process.
4. Improve communication and collaboration with retailers and customers.
5. Re-think transportation ways.
6. Optimise process with data.
7. Invest in the right tools to help control and monitor this process.
8. Consider re-sale, outlet, second-hand, etc. options in your offer
9. Find alternative solutions for your waste.
10. Review the process periodically.



LINES OF IMPROVEMENT

Remanufacturing

Rebuilding of a product to specifications of the original manufactured product using a combination of reused, repaired and new parts.



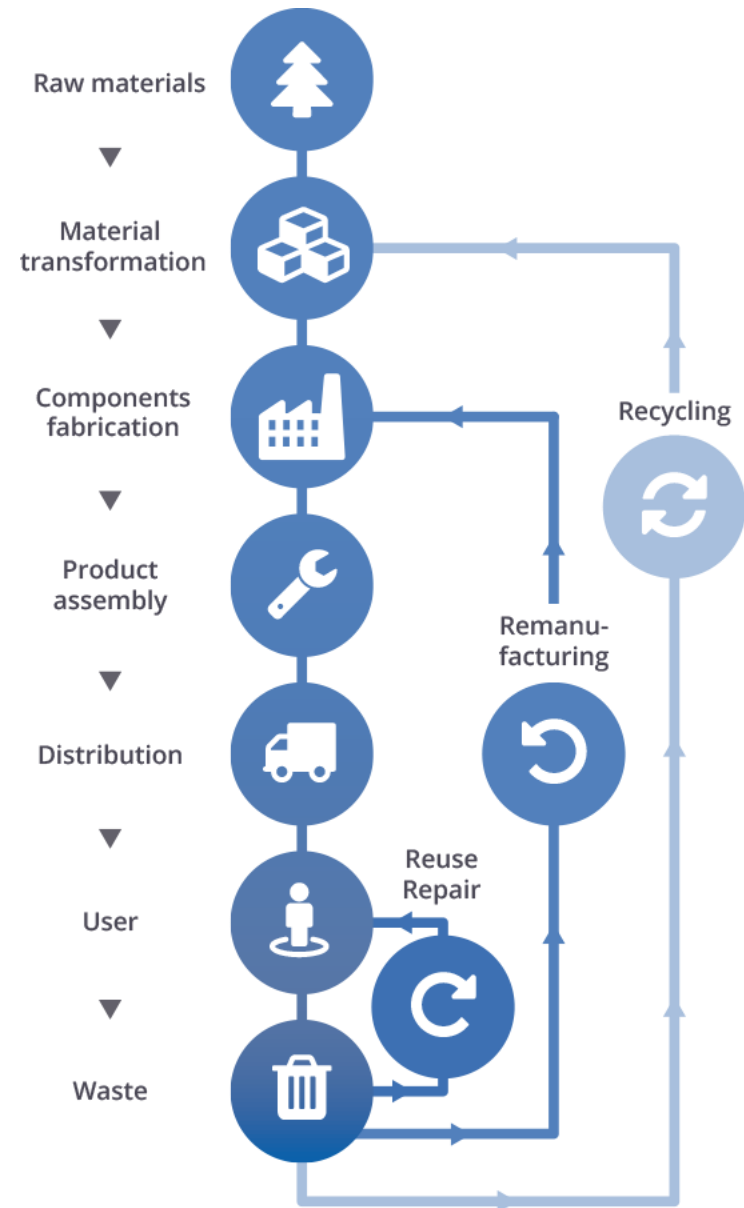


LINES OF IMPROVEMENT

Remanufacturing

Benefits

- Reduce processing time
- Reduce energy consumption
- Reduce raw material consumption
- Reduce waste
- Lower prices
- Purchasing flexibility (leasing, take-back, upgrading, etc.)
- Local jobs
- Higher profit margins





LINES OF IMPROVEMENT

Remanufacturing

Products which are suitable for remanufacturing include those which:

- involve technology that will last for a long time
- have a high inherent material value and production cost
- are sold in market which are tolerant of 'as new' products
- can be collected and delivered
- contain a durable core which can be reused many times
- can be disassembled down to component parts



LINES OF IMPROVEMENT

Remanufacturing

The **remanufacturing process** may not be cheap or fast.

Remanufacturing broadly involves the following steps:

- collection of the product to be remanufactured
- initial assessment for quality and usability
- cleaning of components to be retained
- repair or replacement of broken or missing components
- processing to restore to working order
- testing for quality and safety



LINES OF IMPROVEMENT

Remanufacturing

Requirements

- Effective flows of resources
- Maximize material/value recovered
- End-of-life product recovery decision-making
- Suitable alternative recovery strategies



HOW CAN WE LINK CIRCULAR ECONOMY TO OUR PROFESSION?

WHAT PROCESSES DO WE PARTICIPATE LINKED TO CIRCULAR ECONOMY?

WHAT IMPROVEMENTS CAN BE IMPLEMENTED?

- **Servitisation**
- **Reverse logistics**
- **Remanufacturing**



BS 8001: 2017

A new standard for
the Circular Economy



1st in the world to standardise Circular Economy



BS 8001:2017

Circular economy:

- enables organizations to map out their unique system and understand how their operations impact it.
- explores how, by applying circular economy principles, organizations can capitalize on cost savings.
- unlock new revenue streams.
- make themselves more resilient to external shocks and disruption.

Circular economy is about **organizations** turning things on their head and **re-thinking** how their **resources** are **managed** to create **financial, environmental and social benefits** both in the long- and short-term



BS 8001:2017

What are the six principles of the circular economy?

