



Rethink Resource

Circular Bioeconomy:
A way towards more sustainability?

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28.05.2021

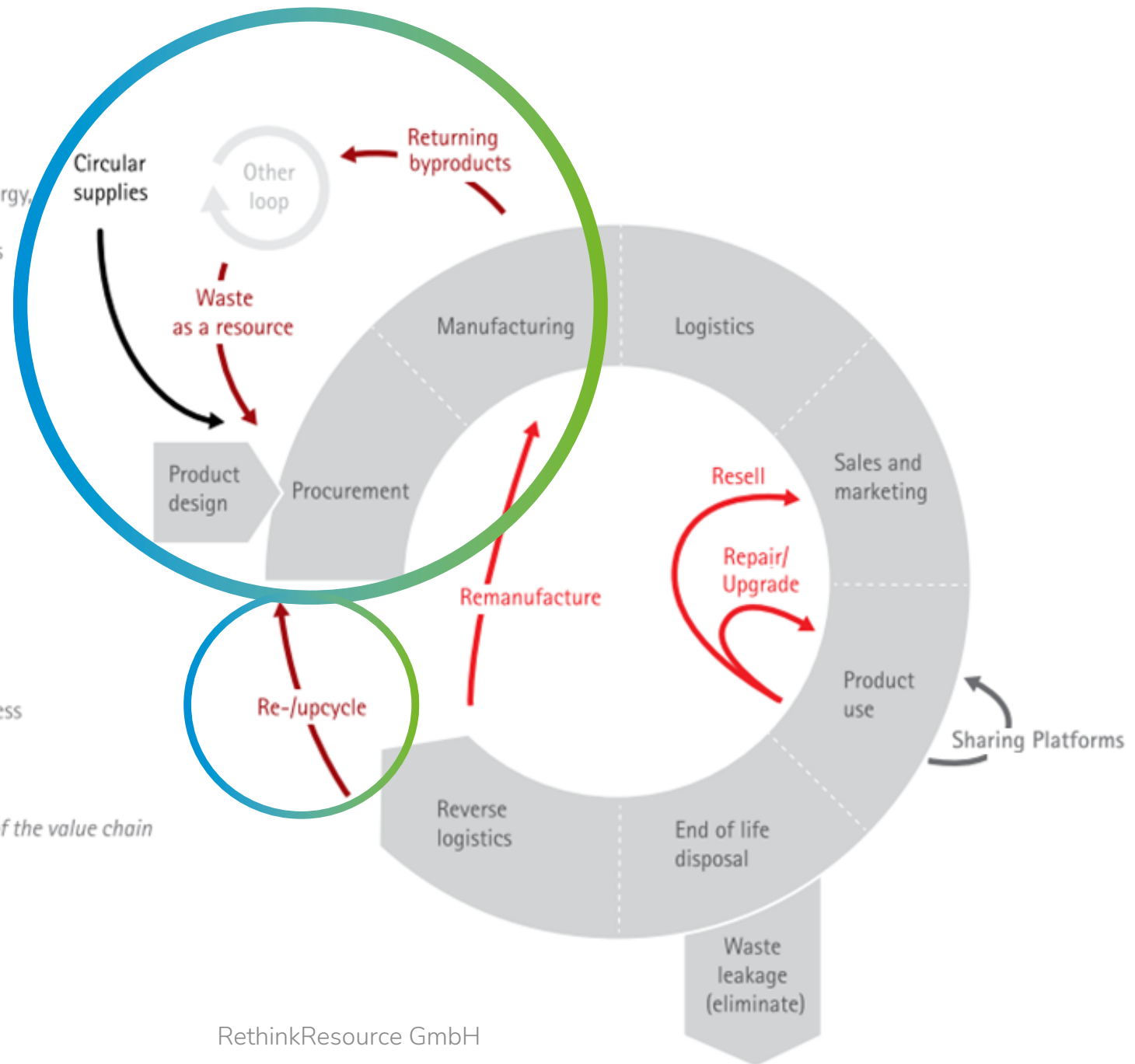
Circular Economy

Approach and Principle



- Circular Supplies:** Provide renewable energy, bio based- or fully recyclable input material to replace single-lifecycle inputs
- Resource Recovery:** Recover useful resources/energy out of disposed products or by-products
- Product Life Extension:** Extend working lifecycle of products and components by repairing, upgrading and reselling
- Sharing Platforms:** Enable increased utilization rate of products by making possible shared use/access/ownership
- Product as a Service*:** Offer product access and retain ownership to internalise benefits of circular resource productivity

* Can be applied to product flows in any part of the value chain





upcycle

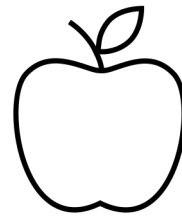
[ˈʌpsaɪk(ə)l] *verb*

reuse (discarded objects or material) in such a way as to create a product of higher quality or value than the original.



Functional Benefits of Upcycling

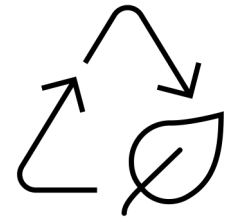
Maximize benefits of upcycled materials



...can enhance **nutritional benefits** by introducing e.g. fibres or proteins into a product



...often acts as a **functional** and a **clean-label** ingredient



...supply chains become more **efficient** and products more **sustainable**



Narrative Benefits of Upcycling

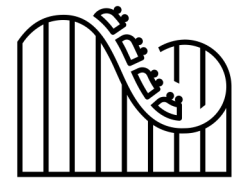
Maximize benefits of upcycled materials



...gives the product more **personality** as well as a real and creative **story** to tell the consumer



...makes the product **unique** and harder to copy since side-streams are more distinctive than standardised ingredients



...creates a special **excitement** that comes from an innovative, “unknown” ingredient



Upcycling Innovation Agency

Our services



Innovation Management

Our experienced team takes on the task of managing and implementing innovation projects for our clients.



Upcycling Product Development

It is our goal and field of competence to conceptualize, design, prototype and implement new upcycled products for our customers.



Circular Engineering

We provide process engineering for factory segments or entire factories in food engineering, bioprocess engineering and associated fields like packaging materials.

Our Network

The RethinkResource Ecosystem





Examples

Closing the Loop in the Food Industry

Bran as Mushroom-Substrate-Additive

- The main side-stream from the grain milling process finds new applications as mushroom-substrate-additive
- Upcycling as **functional ingredient**, because it increases the ability of the substrate to hold water
- In this case, additional added value through local supply chain



Upcycling in the Construction Industry

Filter sludge for ceramics

- A side-stream from the concrete industry, filter sludge, finds a new and innovative application as a raw material for ceramic production
- Exclusive **consumer value** by avoiding waste in the building industry and the resulting gain in sustainability through a circular approach



Cross-industrial Synergies

Pomegranate Pomace for Cosmetics

- Side-stream from the juice/syrup production, pomegranate pomace as resource for cosmetics
- **Upcycling as main ingredient**, price advantage as it is already processed and not a primary resource
- **Sustainable alternative** to primary sourcing of pomegranates and avoidance of waste for selling and producing company



Closing the Loop in the Food Industry

Old Bread for Bread Beer

- Unsold old bread is ground, dried and replaces part of the malt in the brewing process
- Exclusive **consumer value** by avoiding bread waste and the resulting gain in sustainability



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