



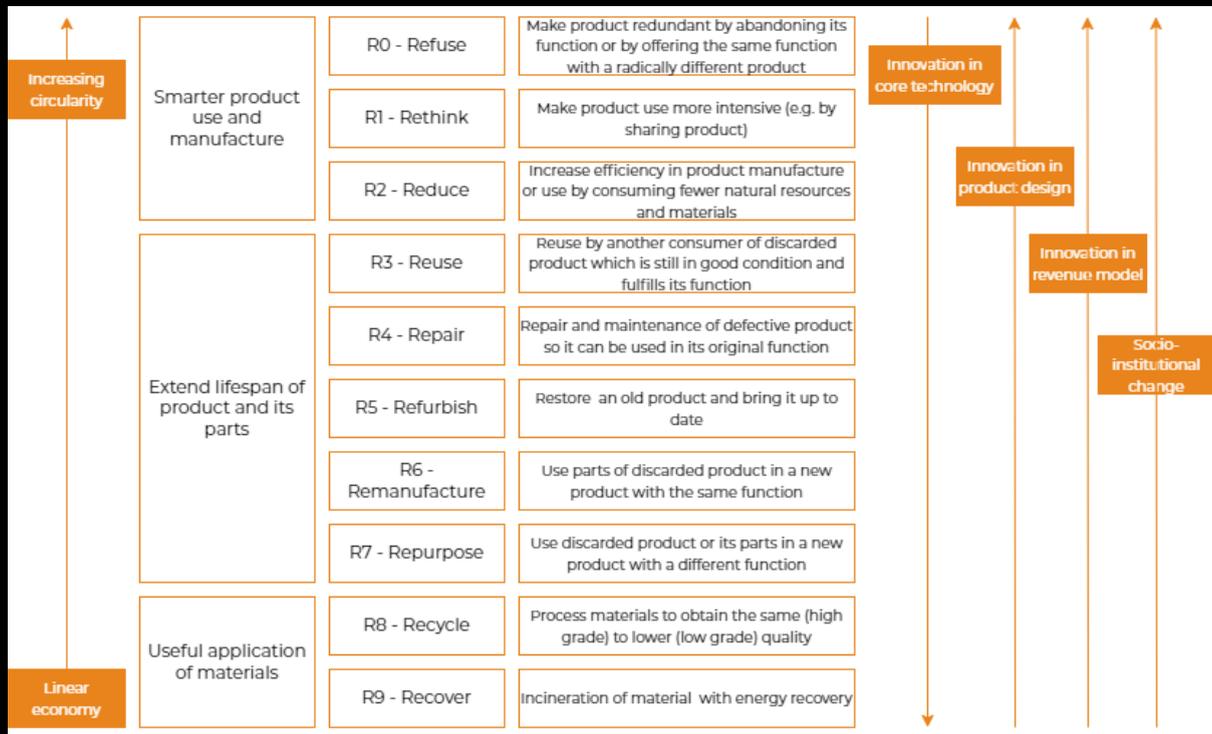
The R strategies in the Circular Economy

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Have you ever heard of the “3R: reduce, reuse, recycle”? Of course! But do you know about the “7 R”? Or even the “10R” strategies?

This is a very simple concept to grasp : instead of wasting the value of the product by letting the user throw it away, the manufacturer or integrator can maximize its value.

The “R strategies” are propositions of products' end-of-life [solutions](#). The more circular a solution is (the higher it is on this graph), the more it means that the end-of-life has been considered from the product design stage.



These concepts are not so recent, the first mention of the 3 R's appeared in the 1980s. As research progressed, a [hierarchy](#) of different strategies was established to reach the 10 R's model of today.

Circular economy means keeping the materials in usage loops. In this manner, when manufacturing a new product the materials used do not come from the ground (i.e. extraction), but rather from discarded products, using one or more of the R strategies. Thus, the pressure on the environment is reduced.

A higher level of circularity means that materials remain in the production chain longer. They can be reused after a product has been discarded, preferably retaining their original quality and a large portion of their value.

It also means that there is a greater overall positive impact, not just an environmental one. The circular economy requires new business models and new behaviors:

- Radical technological innovation, such as bioplastics.
- Behavioral changes, the most concrete example being the sharing economy, whether in B-to-B or B-to-C.

With so many strategies, how to choose?

Many [questions](#) need to be answered regarding:

- The organization's resources (financial, technological, manpower and knowledge capacity),
- The activities, market openings and possible resistance,
- The achievements, which include product design, production, consumption and waste,
- The effects: resource efficiency, environmental and economic impacts and the rebound effect (life cycle analysis).

To give a first understanding, the graph below shows the points in a product chain where different circularity strategies are relevant, as well as the actors in the chain who play a role in these strategies.