

Maastricht University Bachelor Business Engineering

Problem Based Learning (PBL) Case

Circular Smart Phones

Every quarter of a year, around 300 million new smart watches are shipped to be sold around the globe. Customers are tempted regularly to buy new phones with new features and better performance, making their old phones redundant.

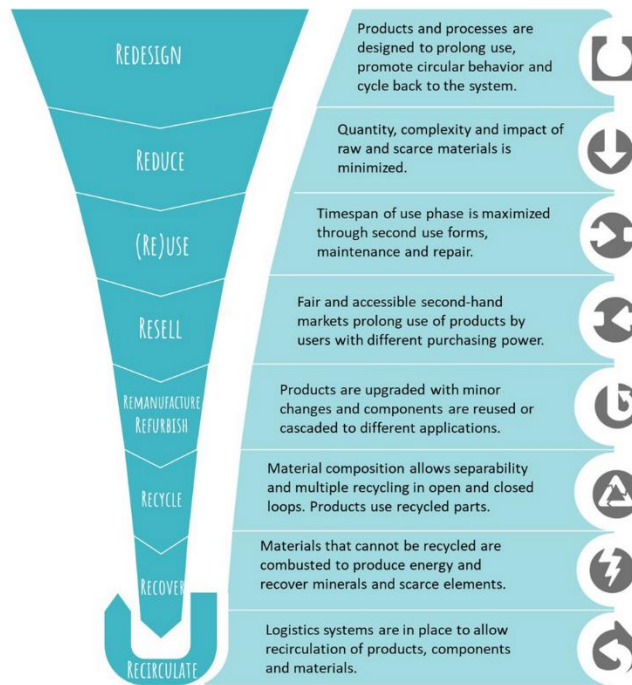


Each smart phone contains several materials. The making or mining of these materials is often harmful for our environment. One example is the casing, which is often made out of plastic originating from crude oil. The production of plastics results in CO₂ emission, as does the incineration of waste plastic. As CO₂ emission is seen as a large contributor to climate change, its emission should be avoided (see Paris Agreement COP21). On top of that, raw materials become more and more scarce and recently prices skyrocketed.

By transforming the linear life cycle of a smart watch into a more circular one, the impact of smart phone products on our environment and the amount of necessary raw materials can be reduced....or maybe even become zero!?

To make the life cycle more circular, companies like Apple, Samsung or Huawei can use the retention strategies as inspiration. As a customer, you also can have your impact on the life cycle of the smart phone as you can see in the retention strategies.

Creating more circular life cycles will help us to protect our environment and rare earth resources.



Picture taken from: Garcia-Saravia Ortiz-de-Montellano, C., van der Meer, Y. A Theoretical Framework for Circular Processes and Circular Impacts Through a Comprehensive Review of Indicators. *Glob J Flex Syst Manag* **23**, 291–314 (2022). <https://doi.org/10.1007/s40171-022-00300-5>