

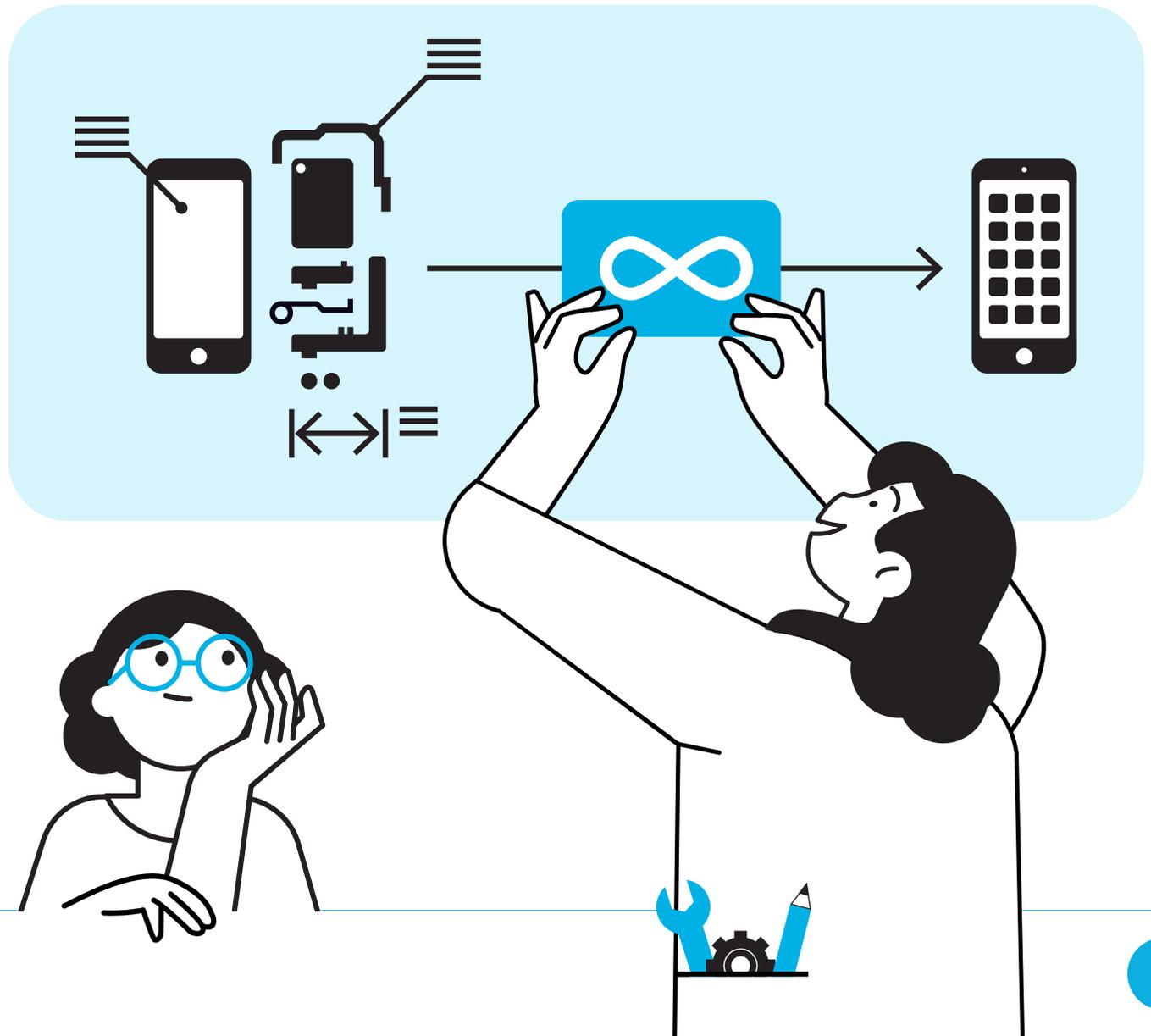
ONE WAY TO CIRCULARITY

Extending product lifetime

What is product lifetime extension?

It is a business model that focuses on lengthening the period that a product can be used, maximizing its utilization, and extending its lifetime. The idea behind this model is to reduce or limit the amount of natural resources used in a product, either by creating products that last longer (therefore, reducing the need for new ones) or by making them easier to maintain, repair, and reuse. Design for recycling will then complete the product lifetime extension practices through minimising the loss of resources once the lifetime of the product cannot be prolonged anymore.

In other words, product lifetime extension is the opposite of planned obsolescence. It is one way of implementing a circular economy as it keeps materials in use as products or components. This way, waste and pollution are significantly reduced and the intrinsic value of products and materials is retained.



Why is it good?



For the environment

It reduces

- ▶ **The extraction of raw materials and associated environmental impacts**, by optimizing the use of resources already extracted, thus contributes to a circular economy
- ▶ **The waste generation and pollution**, by avoiding premature discarding and, consequently, land and/or water contamination
- ▶ **All the negative impacts throughout the whole life cycle**, such as greenhouse gas emissions, energy consumption, water and land use, biodiversity loss

It avoids

- ▶ **The use of toxic substances**, as it is based on reusing natural resources and with its circulation in mind



For consumers

- ▶ **Monetary savings**, although the production of high-quality, longer-lasting goods will most likely result in more expensive goods, the higher upfront cost can be easily compensated in the long run, saving money by avoiding the purchase of cheaper products repeatedly, not to mention the reduction in resource consumption. And some strategies, such as selling, leasing and renting used products, can make the consumer earn money or spend less
- ▶ **Possibility to find rare products** or items out of line on second-hand markets or by refurbishment processes
- ▶ **Obtain products with similar or even better performance as “new”**, sometimes faster and cheaper by remanufacturing alternatives
- ▶ **Restore efficiency** by repairing, since over time an appliance can decrease its performance
- ▶ **Possible added value** to an item through upcycling, developing a new function or design
- ▶ **Consumer empowering** by the ability to contribute directly to circularity and sustainability, using products to its maximum lifetime through good care and repair when needed



For businesses

- **Cost reduction** by reusing materials from obsolete or damaged products, therefore, the company can avoid the purchase of raw materials
- **Reduction of environmental impacts**, such as waste generation and treatment requirement
- **Increase of product portfolio** offering not only new products but also services of remanufacturing and repairing (replacement parts)
- **Opportunity to develop new business models** by providing a service of refurbishment to consumers, besides just the selling of the product itself
- **Identification of improvement points for design of future products** once working on repairing
- **Opportunity to increase profitability** by working with higher added value materials and products
- **Corporate social responsibility**, as the company becomes a part of the solution, not the problem, and can generate more jobs opportunities
- **Achieve customer loyalty** as there is a growing trend among those who tend to value companies that reduce their impact on the planet and are committed to circularity

How to do it in practice?



Reduce

- ▶ To rethink needs and use products and services for a longer time, through buying less frequently, refusing, renting and reusing

Design for circularity

- ▶ To plan the design of the product focused on its durability and liability, also aiming to reduce the use of natural resources and to keep all materials in use

Preventive maintenance

- ▶ By identifying issues or parts that fail before they cause greater damage to a machine and conducting maintenance at critical points, a company extends that machine's productive lifespan

25.5% is the expected annual growth rate of the global preventive maintenance market over the period of 2018-2024¹

Repair

- ▶ To make a product that was damaged or broken work again, helping lifetime extension to happen

9.8% is the expected annual growth rate of the global repair and maintenance market, from \$1280.72 billion in 2021 to \$2066.72 billion in 2026²

Reuse

- ▶ To simply reuse something that is not waste, for the same or different purpose for which it was conceived. It includes the second-hand market, which is based on selling/buying used products — just because one person no longer has a use for a product doesn't mean another person can't gain value from it

127% is the expected growth of the global second-hand market by 2026. It will grow 3 times faster than the global apparel market overall³



Refurbish

- ▶ The process performed within repair or maintenance facilities either to increase or restore performance and functionality or to meet applicable technical standards or regulatory requirements

10% is the expected annual growth rate of the global used and refurbished smartphone market. It was valued at 251 million units in 2021 and is expected to reach 459 million by 2027⁴

Remanufacture

- ▶ To disassemble (for inspection and cleaning) some or all parts of a used product to return it to at least its original performance. It allows extending the equipment life at a fraction of the cost of buying a new one

7.1% is the expected annual growth rate of the automotive parts remanufacturing market over the period of 2020-2026⁵



Product as a service

- ▶ Consumers can rent or have access a product temporarily, only when needed. Cared by the provider, that product can be accessed by many consumers, fulfilling their needs and, therefore, lasting longer

Repurpose

- ▶ To give a new life to goods or components, converting old or discarded materials into something useful

Sources: (1) Market Research, (2) The Business Research Company, (3) thredUP, (4) Globe Newswire, (5) Business Wire