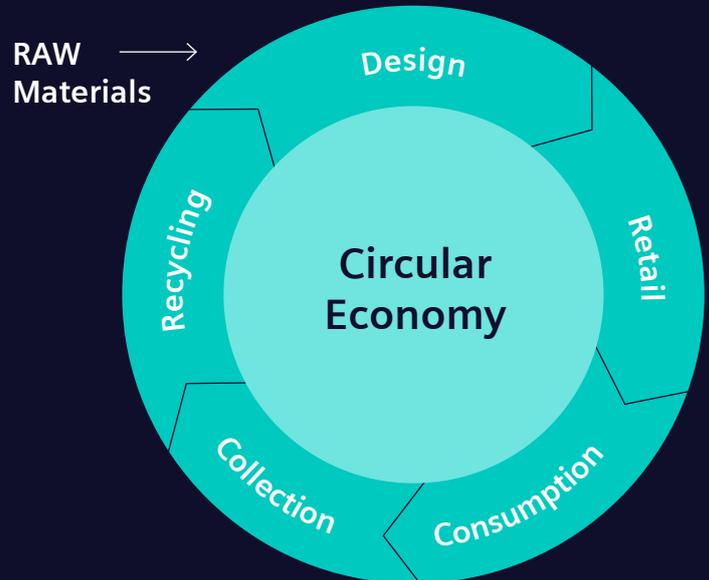


Circular Economy & Eco Design Principles

The design world is changing and with it the process of manufacturing. Looking ahead there is a more sustainable way of making products where more care is taken with regards to the environmental impact of the product rather than just the profit of creating it.

The majority of manufacturing up to this point is based on a linear framework of production. This means taking natural resources and creating products that are more than likely to end up as waste. The premise of a circular economy is to get to the stage where products are being repaired, reused, refurbished, recycled, or remanufactured. This framework becomes a closed loop economy. This type of approach ensures that materials are not simply disposed of but repurposed. Keeping materials and products in use for a longer period of time helps to protect the precious finite raw resources that the planet has.



Linear Economy



Source: <https://www.mvis-indices.com/mvis-onehundred/a-circular-economy-designing-out-waste>

The three main principles

There are three main principles that a circular economy model is built around according to the MacArthur foundation:

1. Eliminate waste and pollution when manufacturing products
2. Aim to keep products and materials in use through their various life cycles
3. The regeneration of natural systems

Change at the design stage

Let us take a further look at the 3 main principles of a circular economy. Up until now products that you purchase have been designed in a way that makes them obsolete within time. Mobile phones are the perfect example of this. Each year an upgraded version of the same phone is manufactured to keep up with the ever-growing demand for new features and designs. What happens with your old phone though? Most likely, it ends up in a drawer or landfill, therefore becoming obsolete. One of the principles of a circular economy is to start at the source of each and every product that is being manufactured – design. Changing the way a product is designed at the beginning stages can have a huge impact on the life cycle of any given product.

Having the right kind of mindset when designing a product and viewing waste as a design flaw, rather than not giving it any thought at all, and trying to rectify this by using materials and technology that is geared towards a circular and eco design approach, is the way forward.

The brand Gerrard Street has designed modular headphones as a subscription service. Designing the product with a modular approach makes it easy to disassemble and repair the various components if the item breaks. This ensures that only the one part of the product needs to be replaced for it to function again rather than having to discard the whole product. The addition of a subscription service also has the benefit of ensuring that the product won't simply be discarded when a customer doesn't want or need the item anymore. Due to its modular manufacturing process, the components can be re-introduced into the system rather than simply being discarded.

Another great example of re-designing the way a product works at the beginning stage are reusable items such as straws, coffee mugs, and water bottles. By tackling the design flaw of single use plastics and designing and manufacturing items that are meant to be used over and over again actually reduced the impact on the environment.

Reuse, repair, recycle – a whole life cycle

Reusing products and materials is another main principle of a circular economy. We have heard it before; our planet has a finite number of resources and once they are gone that's it, they are gone. So, what can we do to ensure that resources and materials are protected? Manufacturing products that are reusable, recyclable, and repairable and re-using resources and materials that have come to the end of their life cycle is the way forward. Keeping a product circulating for as long as possible is one of the key factors to reducing waste.

Did you know that around 1.4 trillion drink containers are produced each and every year? This is a huge amount of perfectly good material that should not be wasted. Countries such as Germany have implemented a deposit return scheme: this works on the premise that you are actually charged a deposit for the bottle at the till, which incentivises the consumer to return the drinking bottle. After doing so they receive the deposit back. The containers are cleaned, processed, and made into new drink bottles – a circular process.

Regenerating nature

Helping nature to regenerate itself is the third major principle of a circular economical approach to design. Looking at nature, you can see that it within itself is a cyclical system, there is no such thing as waste. Within a linear economy emphasis is on doing less harm to the environment which is a good step however a circular approach would be trying to mimic nature's cycles.

Humanities demand for ecological resources currently greatly exceeds the resources that the planet can generate. Not only is there the overuse of those raw material but what we as humans are giving back is just as bad – waste. Therefore, it goes without saying that there is a need to actively give back to the planet, regenerate nature as much as possible. Doing so would go a long way to reducing emissions and capturing greenhouse gases. This means restoring forests and regenerating biodiversity.

Using renewable energy to produce products and reduce the use of fossil fuels as well as designing products that are made from materials that are already in circulation are just a few ways to implement this eco design principle. However, there is a need to actively regenerate nature. Some companies do this by actively trying to plant trees, for example. The company WeWOOD designs watches made out of scrap wood. A tree is planted for every watch that is purchased. Their goal for 2020 was to plant one million trees. They work together with the organisations such as trees for the future and American forests who help them fulfil their mission.

The search engine Ecosia is a certified B Corporation due to its social business model – impact over profit. Ecosia search engine users have already helped to plant over 100 million trees. According to their calculations, doing so removes around 1771 tons of CO2 every day. Certified B corporations are companies that actually place the environment and social issues before profit. These companies are key to accelerating a global shift to redefine what it means to have a successful business. Profits are used to create a positive impact not only for the environment, but also for communities.

Implementing these three main principles of the circular economy framework when designing or manufacturing a product will help to protect resources and create a shift towards a more ecological way of manufacturing.

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