

# Moving away from a waste-based model

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Photo: Jonathan Kos

Too often the circular economy is muddled up with some kind of advanced recycling process that would mean keeping our industrial system as it is and preserving a growing consumption model. This idea is based on a belief that recycling will take care of everything. One of the most startling examples of this is the part of the European Union's Circular Economy Action Plan which aims to increase recycling rates: up to 70% of all packaging waste by 2030 and 65% of all municipal waste by 2035. In a properly built circular economy, one should rather focus on avoiding the recycling stage at all costs. It may sound straightforward, but preventing waste from being created in the first place is the only realistic strategy.

## Preventing waste from being created in the first place is the only realistic strategy

While we obviously need to continue recycling for quite some time, putting the emphasis on genuine circular innovations – moving us away from a waste-based model – should be our sole objective. Investing in them today would result in leadership tomorrow.

### **Recycling is linear**

In a linear economy, we do not account for the side-effects generated by a product once sold to an end customer. The aim here is to sell a maximum number of products at minimal cost. Continuous pressure to reduce costs leads to the creation of many of these side-effects – called externalities by economists. The higher a company's the rate of production and the higher its efficiency, the more successful it will be at selling its goods in a fiercely competitive environment.

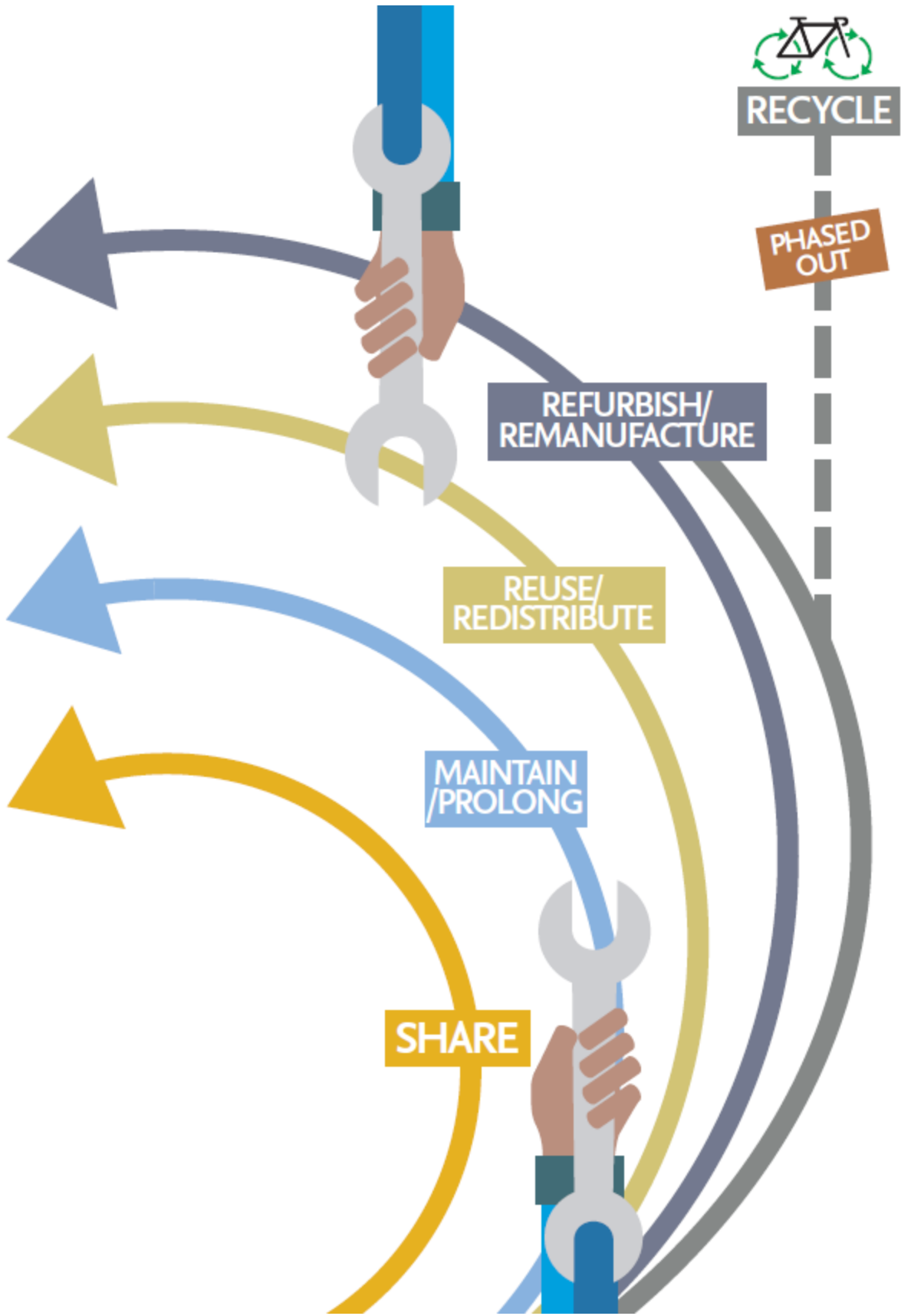
This worked well in the twentieth century when resources were easily available and raw material prices kept decreasing. Waste, as an economic externality, was not the producers' responsibility. Managing waste cycles, dumping it out of sight or, at best, recycling it – but only when it was cost-effective – were under the control of our national institutions.

Visionary manufacturers, who understand the upcoming challenges of increasing their economic resilience, know better: a product that is returned for repair will cost less to fix and sell again, than manufacturing it from scratch.

In our current model, we extract resources, transform them into products, and consume or use them, prior to disposing of them. Recycling only starts at the throwing-away stage: this is a process that is not made to preserve or increase value nor to enhance materials.

## A product that is returned for repair will cost less to fix and sell again, than manufacturing it from scratch.

Recycling is the second material stream of a linear economy. Recycling has to cope with huge volumes, and complex polymers and materials. Often these cannot be extracted or end up in mashed-up fragments that – once again – require lots of energy to create a new product from scratch. Recycling has to deal with products that often are not meant to be sold with a feedback loop strategy, so there is a loss of energy, a loss of manpower hours, and a loss of research and development capacity, as all these investments have been made for a one-time production.



  
RECYCLE

PHASED OUT

REFURBISH/  
REMANUFACTURE

REUSE/  
REDISTRIBUTE

MAINTAIN/  
PROLONG

SHARE

Finally, we need to understand that recycling is not an effective strategy for dealing with unused resource volumes in a growth model, be it strong or weak, linear or even falsely circular. We will find ourselves in a never-ending race in pursuit of continuously generated waste, rather than seeing the avoidance of waste as a path to beneficial innovations on many levels.

Of course, it is easier to think about recycling. This avoids changing the whole of our volume-based production mode. But in a world where we have to shift our consumption patterns and choose alternatives that make more moderate use of energy, recycling is no longer up to expectations.

### **Recycling is 'business-as-usual'**

Since we cannot stop the volume of waste overnight, investments in the recycling industry are needed. But really meaningful investment in the development of a circular economy takes place outside of the recycling space. Indeed, the more we recycle and the more we finance recycling factories, the more we stay "linear". We mistakenly believe this is the best route to solve our problems but, by staying in a recycling-based economy, we will delay the need to shift gears into an advanced circular economy scenario.

In a circular economy, resources do not end up as recyclables since products are made for several life cycles to come. Products lifespans are extended via maintain, repair, redistribute, refurbishment and/or re-manufacture loops, thus never ending up in the low-value, high-need-for-energy loop: the recycling one.

## **Closing loops next to where customers live, while avoiding the creation of waste, is a short and longer-term win-win for any leading re-manufacturer**

We live in a world in dire need of disruptive innovations. Closing loops next to where customers live, while avoiding the creation of waste, is a short and longer-term win-win for any leading re-manufacturer. Short-term because you are in direct contact with your customers, and taking back a product that needs maintenance is an opportunity to better understand their needs and help them with additional services. Long-term because you will lower your exposure to future financial risks. Any of the feedback loops that come prior to the recycling loop are an opportunity to take back control over your stock of resources – taking control away from the raw material markets, which may become highly volatile. Increased interactions with your customers, both commercial and financial, and an in-depth understanding of their needs, would definitely increase loyalty rates and a business' overall resilience.

Re-using, re-distributing and/or remanufacturing strategies are the preferred approaches in a circular economy, as they are based on parts durability. Caring and preserving the value of product components increases corporate economic resilience, while diminishing external market risks. And, whether you are acting in a highly advanced economy or an economy reaching out to its maturity level, these strategies make crystal-clear sense: they are less costly in the long-run because repairing a product made to last is always less expensive than producing it from scratch.

### **Leapfrogging into valued supply chains**

Whether your production units are based in a developed or an emerging market, the vision remains the same, but the strategy differs. The vision is about addressing the needs of your customers, shifting from a product to a service-based model, lowering your production costs

thanks to the re-use of or ease of remanufacture of a product sold or leased with the guarantee that it will be returned at some point to your plant to be prepared for its next economic life.

Following this approach, we must move away from activities that devalue the material, such as recycling, or even destroying it by incineration, and instead invest in those activities that preserve it: reuse and remanufacture. The two are especially important since they create many more secure jobs. Walter R. Stahel, the godfather of the modern circular economy, introduced the metric of labour input-per-weight ratio (man-hour-per-kg) to measure job creation in relation to resource consumption. He found that the ratio man/hour per kilo (mh/kg) of used resources for a remanufactured engine compared to the mh/kg for the manufacture of the same engine from virgin materials is 270:1. The impact on employment is huge. In an economy of maintenance, repair and remanufacture, employment becomes central to the effectiveness of such a model.

## In emerging markets, leapfrogging straight into a national remanufacturing strategy is the way forward

The re-localization and the re-sizing of activities closer to the customers become critical. Production sites should migrate from a highly centralized global hub to units designed to fulfill local needs. In developed markets, a possible plan could be to develop strategic partnerships, with local service providers providing the infrastructure. In emerging markets, often with a dire need for jobs, leapfrogging straight into a national re-manufacturing strategy is the way forward. Becoming the next "world factory" hub is a very obsolete vision today.

One way to start thinking like a leader in the next economy while creating jobs could be in order of priority:

- **Reuse** by repairing (goods) through re-hiring (people), while sharing the radical benefits (awareness) of such model;
- **Redistribute** by promoting access (goods) through collaboration (people), while sharing information (awareness) about this model;
- **Remanufacture** via the ease of disassembly (goods) by training (people), while sharing the acquired knowledge (awareness) through this model;
- **Migration of recycling activities** by diverting (goods) to service models, transferring skills (people) to remanufacturing processes (awareness).

All of the above make sense in a world where planetary limits have already hit most economies.

Adopting a circular strategy by avoiding reliance on recycling is the way forward.

This is about genuine innovation derived from genuine leadership.