

CIRCULAR ECONOMY FOR QUALITY GROWTH

CIRCULAR ECONOMY REFERS TO AN ECONOMIC AND CULTURAL MODEL DESIGNED TO CREATE GROWTH AND QUALIFIED EMPLOYMENT, ALONG WITH THE PROTECTION OF NATURAL RESOURCES. RELAUNCHING THE INDUSTRIAL SYSTEM GOES HAND IN HAND WITH THE DEVELOPMENT OF EFFECTIVE STRATEGIES TO INNOVATE PROCESSES AND PRODUCTS.

CIRCULAR ECONOMY

A circular economy can be defined as an economy that is *“regenerative by design, and aims to keep products, components, and materials at their highest utility and value at all times. The concept distinguishes between technical and biological cycles”* (source: Ellen MacArthur Foundation).

In more advanced settings, what the states and the citizens see in a circular economy is a developmental model capable of generating wide-ranging and structural benefits, particularly in society. This economic and cultural model is designed to create growth and qualified employment, along with the protection of natural resources.

From the point of view of enterprises, the circular economy is considered a business strategy to achieve economic advantages, such as cost reduction or entering new markets that can offer appealing profit margins. An extensive application of the circular economy's principles by European businesses could lead to € 400 billion annual savings in the materials used for durable goods production; on the other hand, just in Italy the number of new jobs created as a result of the circular economy-based models and services could be 140,000 over the next five years.

However, where should one start off to achieve these objectives? It is necessary to identify the most effective strategies, capable of maximizing economic and social benefits in the short run while, at the same time, accelerating the adoption and spread of the circular economy.

The following priorities should be addressed:

- a) developing business models that are founded on the access to added value services: in the whole of Europe, consumers' preferences are undergoing a shift towards disownership with respect to service access, as an alternative to ownership of goods. This favours an increase in business productivity of the assets and their quality. In this setting, the technologies behind the Internet of things, 3D printing, and traceability are extraordinary accelerators of change
- b) producing durable goods with high and medium-high technological content through remanufacturing processes: this industrial strategy allows for high levels of remuneration to be paid to highly qualified professionals along with considerable savings in raw materials
- c) giving incentives to marketing and purchasing of products that are

manufactured and designed to provide the market with a high value of material renewability, including the recovery of post-consumer recycled matter, used within “closed” and controlled cycles. The advent of smart cities, the evolution of reverse logistics networks, modern recycling technologies and cultural change among consumers can favour the establishment of products manufactured with the use of renewable material also obtained from post-consumer recycling processes.

The identification of some broad and systemic issues can be helpful in focusing public and private investments, while it can also help avoiding micro-sectorial fragmentation of the initiatives that will be undertaken.

The broad issues indicated above are important not only in environmental terms, but they are also an effective stimulus to the creation of economic and occupational value, in that they make it possible to extend production and service supply chains, create new ones, develop ties between heterogeneous stakeholders belonging to different settings.

Business strategies for the circular economy

The main European industrial concerns have long been taking actions to improve the efficiency of the resources used in product manufacturing and production processes. While resource efficiency aims to “do the same things better” and is based on largely technological skills, the circular economy is concerned with “doing the right things” through integrated and multidisciplinary skills (*figure 1*). It is therefore necessary to start systemic eco-innovation programmes, designed to transform the enterprises’ business models from linear into circular ones.

The leading enterprises that have implemented comprehensive transition programmes towards the circular economy are working simultaneously and in a coordinated way on three areas:

1) **business model innovation**. The leading enterprises transform their value proposition from offering goods to be sold to clients into offering access to a service

2) **product innovation**. The main product innovation strategies adopted by the leading enterprises within the circular economy framework are:

- design for disassembly: optimizing products in terms of separation of their parts, therefore in terms of re-use/recycling
- eco-design: designing products free of toxic components, with optimal use of materials
- co-creation: designing products collaboratively, involving the clients and the partners in the supply chain since the very beginning
- closed loop recycling: designing products (and processes) with the aim to use materials from post-consumer recycling and recovery treatments
- biomimetics: replacing traditional materials (which potentially generate waste) with environmentally friendly organic matter

3) **process innovation**. The main actions include:

- resource efficiency: designing more efficient production processes, which optimize the use of both direct and indirect resources
- reduction/re-use: studying processes that reduce waste material, scrap, and explore the possibility of concretely reusing them in the processes themselves
- re-manufacturing: manufacturing processes performed on end-of-life parts or products in order to renovate them, with equal or higher performance

FIG. 1
RESOURCE
EFFICIENCY AND
CIRCULAR ECONOMY

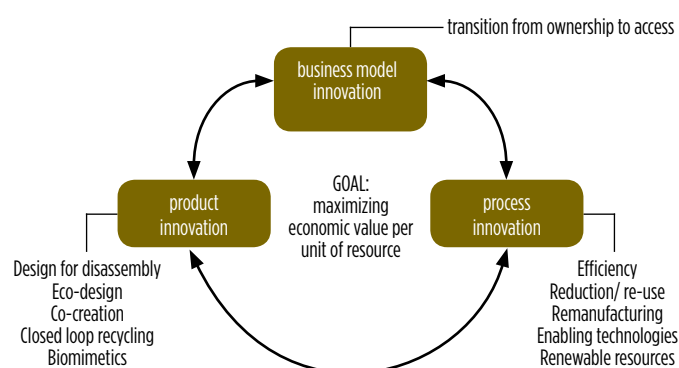
Main differences between an approach based on resource efficiency and a model based on the principles of the circular economy.

	Resource efficiency	Circular economy
Vision	Do things better	Do the right things
Skills	Technological	Multidisciplinary (social and economic science)
Decoupling goal	Relative	Absolute



FIG. 2
STRATEGIC AREAS

Strategic areas under consideration by businesses investing in the circular economy.



than the original and with a guarantee equivalent to new products

- adopting enabling technologies: using technologies, such as the Internet of things, Rfid traceability, 3D printing, in business processes
 - using renewable resources as a source of energy for the production of goods.
- The diagram in *figure 2* briefly illustrates the industrial strategies adopted by enterprises following circular economy models.

Italy: in search of a quality recovery

As people become increasingly aware of the fundamental role played by growth in our society, industrial policies designed to decouple economic growth from the use of resources by production systems should be favoured. From this perspective, the paradigm of a circular economy can stimulate businesses, institutions, and citizens to trigger a quality and balanced growth, with low impact on natural systems, which must be safeguarded for future generations.

A “circular” view of the economy could thus contribute to focus civil society on shared ideals, in which the process of changing our economic system may be rooted. Our country’s resources, the

protection of its natural systems, the job prospects for the new generations are bold and incisive issues, which affect emotionally a large number of people and families. Creating consensus on medium to long-term targets is fundamental to move rapidly and efficiently towards the green economy and, in particular, circular economy.

Moreover, the circular economy can help enterprises improve their capacity for regenerating the resources they “borrow” from the biosphere to generate the goods and services proposed on the market. In parallel, citizens/consumers would have the opportunity to better appreciate which products do not cause hidden environmental costs that are then faced by the community.

There is a need for organizations and people capable of making pervasive innovations in business models, production processes and products according to the circular economy, thus creating long-lasting value and constantly reducing the costs and consumption of natural resources.

Daniilo Bonato

General Director, Consorzio Remedia;
European Commission, High Level Steering
Group Raw Materials member