Management Strategies in Circular Economy

Margareta Ilie
Constantin Ilie
Ruxandra Marin
"Ovidius" University of Constanta, Romania
ilie.marga@gmail.com

Abstract

In order to assure a green future, the humanity must think that the environment is at risk. Commonly, environment is illustrated by circular phenomenon with unified ecological relationships in a sustainable ecosystem. We must re-learn to living in communion with environment and with one another. As circular economy encourages change and develops opportunities to do business according to the principles of circular entrepreneurship, that ensures the use of resources continually, thus avoiding large quantities of resources from floating and converting to waste. The present work intended at improving awareness of the efforts, opportunities and accomplishments of circular economy and assessment of present literature regarding the definitions, necessities and implications of circular economy. As now, a theory specifically centered on circular economy is yet in discussions, the method used was the literature examination and establishing some main principles outlining the specifications that illustrate the circular economy. In the results the authors acknowledged among the features that the circular economy must close, reduces and tightens the loop of resources and should covers the different entrepreneurial practices, from consideration to development of opportunities.

Key words: circular economy, waste, circular entrepreneur
J.E.L. classification: L26

1. Introduction

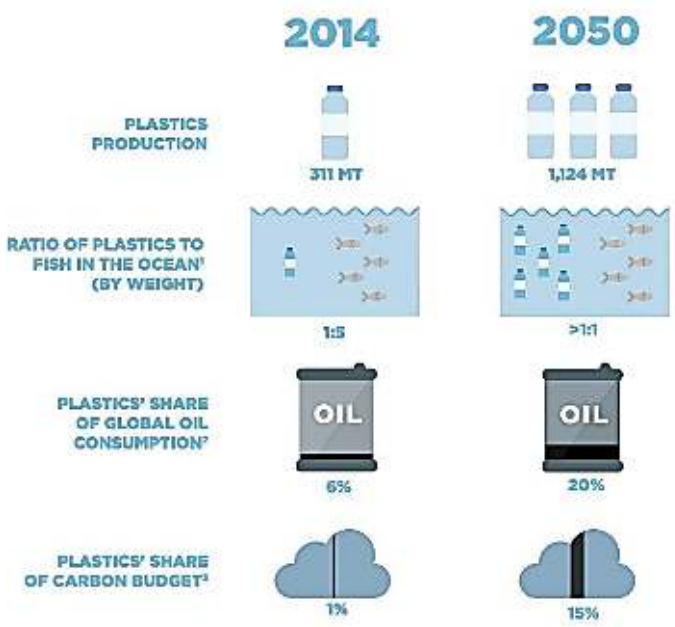
Growth off the global economy is based on rise of consumption and of demands of resource like fossil fuels, minerals, metals, forestry, biomass, fishery, etc. However, the resources are ending in the same time with the human place of living are expanding, the resource exploitation heightens, and the waste amounts are increasing. Additionally, the climate quick transformation includes a new threat to human existence by forcing the weather further unpredictable and more extreme as phenomenon, as a result of business growth centered on consumption without bearing in mind the long-term impacts on the environment.

The developments are obvious. We have shifted to an economy of disposability where the vital resources we extract are going to waste and trigger damage to people and planet. The damaging consequence determined by single-use plastics are now well known, with an estimated truckload being dumped into the ocean every minute; about 25% of food produced for human use is, also, dumped to waste; and, clothing making has folded, yet consumers wear their outfits for half as long, to remind just few examples (Gawel, 2019).

2. Literature review

The mining and processing of the natural resources that run more rapidly through our economies enriches to half of planet's greenhouse gas emissions. At The Same Time, the economic value of these lost resources is enormous. A yearly approximate value of $62.5 billion is lost in the form of waste (Figure no. 1). This is three times more than the yearly production of the earth's silver mines and more than the GDP of the majority states.

Figure no. 1. The projected increase in plastics production.

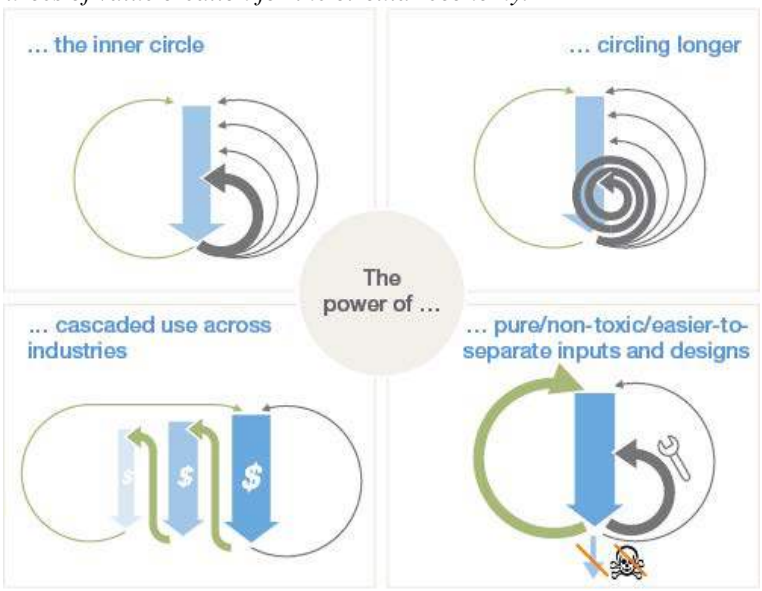


Source: World Economic Forum, 2019, https://www.weforum.org/agenda/2019/10/innovation-entrepreneurship-waste-circular-economy/ .

These are a some of the realities that consider into shifting the way people are thinking, not only about how to consume he resources, but also how to make the life cycle of a product further sustainable to the point that the know-how should not create any waste, but include the product in everyday life by recycling it endlessly.

As is defined by the European Parliament (European Parliament, 2018) " The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended."

Figure no. 2. Sources of value creation for the circular economy.



Source: Ellen MacArthur Foundation circular economy team (https://www.ellenmacarthurfoundation.org/our-story/the-team/team)

A more inclusive definition/ presentation is showed by World Economic Forum and it sounds like this: „A circular economy is an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems and business models. (Figure no. 2).

3. Findings

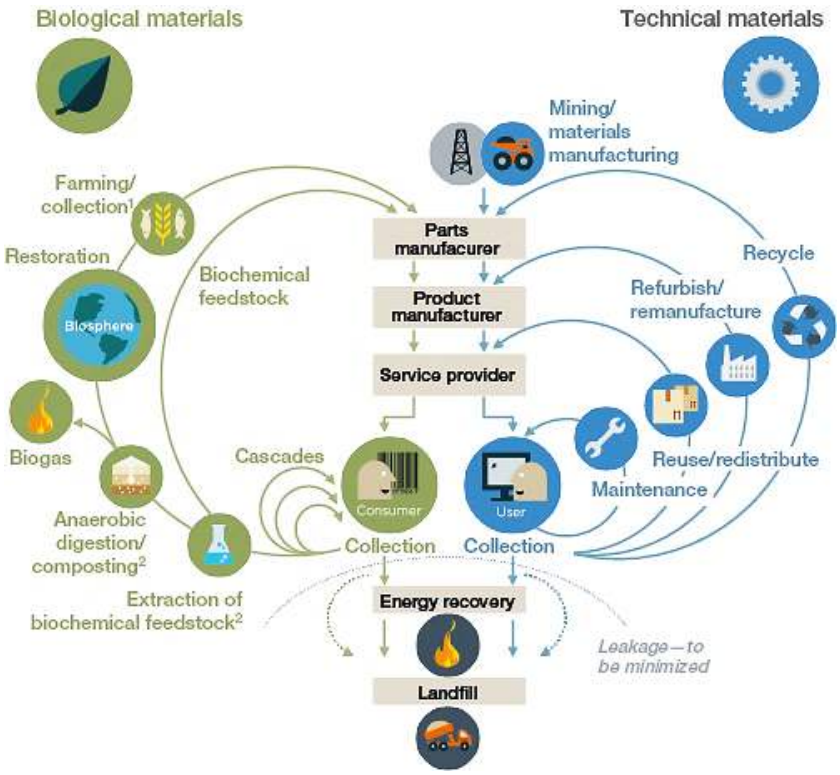
This is the turn from the linear model of "take-make-dispose" to the circular model of recycling, re-use, and designing for recyclability. (Figure no. 3).

Figure no. 3. The circular economy

Source: World Economic Forum, 2019, https://www.weforum.org/agenda/2019/10/innovation-entrepreneurship-waste-circular-economy/ .

Thinking about the above definitions and explanations, the circular economy aims to keep on using the products and material values as long as possible. The main difference is that at the end of the product life, it is utilized yet again in order to generate further value. So, the consumption of resources and the waste are cut. (Figure no. 4)

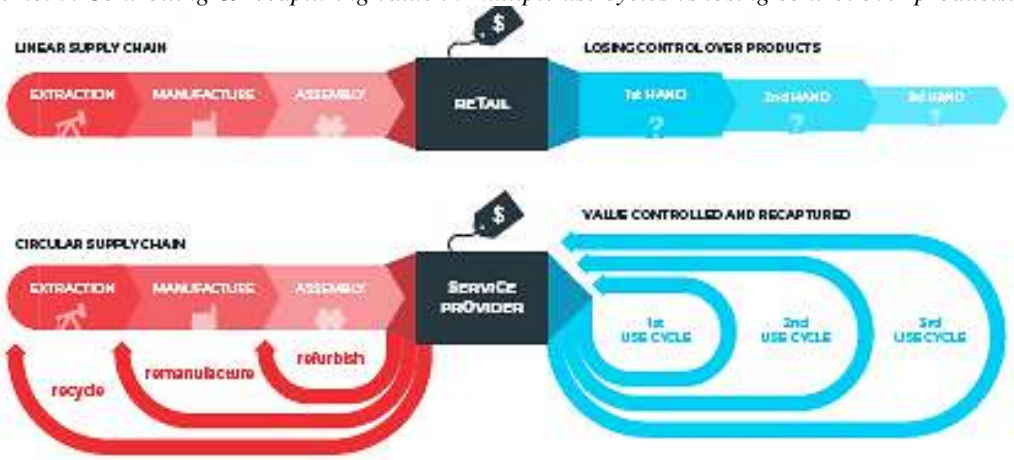
Figure no. 4. The circular economy—an industrial system that is restorative by design. The butterfly model.



Source: ellenmcarthurfoundation.org (https://www.ellenmacarthurfoundation.org/our-story/the-team/team)

The profit will be earned through several usage cycles. Also, the earnings can grow considerably when circular activities facilitate a second and third product use stage (Figure no. 5).

Figure no. 5. Controlling & recapturing value in multiple use cycles vs losing control over products.



Source: Fischer, A. 2016, p. 8, https://www.circle-economy.com/wp-content/uploads/2016/12/finance-white-paper-20161207-EN.pdf

The present principles of applied economy determined negative influence of human life, such as (Tonelli, 2019):

- Diminishing the biosphere – the rate of extension is 10 to 1000 extinct species per year. The most affected industries are tourism and agriculture, as the natural ecosystem is negatively affected in its function;

- Water shortage – the water withdrawals have tripled in the last 50 years. The results in water shortage will affect industries like food and beverage, pulp and paper, textiles, steel production, first by the cost and then by the absence of water;
- The biome areas are shortening (Biome – is an area of the planet that can be classified according to the plants and animals that live in it, National Geographic). The results of using (exploitation) large area of land affects industries important for human life, like agriculture, where governments strengthen regulations to control the escalating crisis of biome surfaces;
- Releasing new types of materials/substances in the world atmosphere – the new materials/ substances, such as GMO (Genetically Modified Organisms) in agriculture, nanomaterials in electronics, micro-plastics in consumer goods, they turned out to be malicious for human life. The risks implied for the companies operating in these industries it comes out from the adoptions by the governments of regulations aimed to cut the use of dangerous substances;
- The Atmospheric Aerosol Overloading - Aerosol ("Aerosols are minute particles suspended in the atmosphere. When these particles are sufficiently large, we notice their presence as they scatter and absorb sunlight. Their scattering of sunlight can reduce visibility (haze) and redden sunrises and sunsets. Aerosols interact both directly and indirectly with the Earth's radiation budget and climate. As a direct effect, the aerosols scatter sunlight directly back into space. As an indirect effect, aerosols in the lower atmosphere can modify the size of cloud particles, changing how the clouds reflect and absorb sunlight, thereby affecting the Earth's energy budget." According to NASA (https://www.nasa.gov/centers/langley/news/factsheets/Aerosols.html). The effects are not really understanding or predicted, but is for sure the results of burning tropical forest, coal and oil. The risks for companies come from the adoptions by the governments of regulations aimed to limit or ban these activities;
- The Ocean Acidification – According to National Geographic: "The oceans are growing more acidic, and scientists think the change is happening faster than at any time in geologic history.". the marine ecosystem is affected by the sinking of the carbon in ocean, which developed over-acidification of the ocean with drastic negative modification of marine ecosystems. The main industries heavily altered are fishery, fish processing and food industry;
- Loss of Stratospheric Ozone – the Chlorofluorocarbons (CFCs) are substances that are depleting the ozone layer. The CFCs are still using in refrigeration, air-conditioning, solvents, cleaning products medicinal aerosol, growing agents in foams. The companies with manufacturing in this area are obliged to innovate in order to remove CFCs from their products.

The results of negative effect over the human life already determined mass movements, where the people are reacting against the intensified used of local resources: in 2014 Coca-Cola was forced to shut down bottling plant operations in northern India (The Guardian, 2014).

The concept of circular economy is a relatively new paradigm in Management and the model is still being built and outlined in management area of science. The range and number of approaches and styles of management indicate that circular economy is a concept, wherein model solutions play an essential part. However, the nowadays management models and methods do not cover all characteristics of circular economy and they are mainly targeted at decreasing the negative impact of economic activities instead of solving their core roots in a holistic way (value-based decision-making framework that integrates all aspects of planning for social, economic, and environmental considerations).

Circular economy is founded on the next principles (Skawińska, 2018, p. 220):

- Waste is a resource;
- Diversity is an advantage;
- The energy used should stem from renewable sources;
- Management should be based on systemic thinking;
- Prices and feedback mechanisms should reflect real costs.

Circular economy as a management model can be effectively employed by means of (Skawińska, 2018, p. 228):

- Strengthening social capital (trust, customs and values, solidarity, cooperation, etc.) that require investment in order to improve;

- Creating a system of first choices for managing resources in a circular way, in order to diminish the competitive benefit of the linear management models;
- Stimulating collaboration among suppliers and receivers and manufacturers and consumers in the direction of a cooperative sharing economy;
- Creating and implementing rules to protect the environment, recycling measures of a variety of waste and product quality standards.

4. Conclusions

In a resource-constrained world, future have no need for waste. Developing innovativeness with how we obtain, exploit and dispose of resources is vital for a thriving and sustainable world economy. Enterprises and sustainability experts from everywhere are stepping to change the business by executing improved processes for sustainable inputs, enhancing product design and closing raw material loops. This is the basis of the circular economy.

A circular economy delivers to businesses the means to a fresh form of development and prospects to resolve some of the major questions of present-day. Even that some businesses profitably employ the circle economy requirements, the transfer has only started. It is one of the biggest business chances of our generation.

The industry must change from linear to circular to regenerative business models. The trend, obliged by the climatic alterations and the reduction in the direction of the absence of resources, is to introduce in business models actions that will reuse resources in the cycle of the nature, which will lead to environment regeneration. Therefore, the entrepreneurship is essential to push further this transformation, thinking that governments will only act just if citizens request it.

The circular economy would close, reduces and tightens the loop of resources and should covers the different entrepreneurial practices, from consideration to development of opportunities.

5. References

- Gawel, A., 2019. *Innovation and entrepreneurship can cut waste and deliver the circular economy*, [online] Available at: https://www.weforum.org/agenda/2019/10/innovation-entrepreneurship-waste-circular-economy/
- European Parliament. *Circular economy: definition, importance and benefits. News.* [online] Available at: https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits
- Fischer, A., Achterberg, E., 2016. *Create a Financeable Circular Business in 10 Steps*. [online] Available at: https://www.circle-economy.com/wp-content/uploads/2016/12/finance-white-paper-20161207-EN.pdf
- Tonelli, M., Cristoni, N., 2019. *Strategic Management and the Circular Economy*, Routledge, New York. [online] Available at: https://www.researchgate.net/publication/329240466_Strategic_Management_and_the_Circular_Economy
- The Guardian. 2014, *Indian Officials Order Coca-Cola Plant to Close for Using Too Much Water*, June 18, [online] Available at: www.theguardian.com/environment/2014/jun/18/indian-officals-coca-cola-plant-water-mehdiganj.
- Skawińska, E., Zalewski, R.I., 2018. Circular Economy as a Management Model in the Paradigm of Sustainable Development. *Management Journal*, Vol. 22, No. 2, pp. 228, doi: 10.2478/manment-2018-0034
- * * * *From linear to circular - Accelerating a proven concept. Towards the circular economy: Accelerating the scale-up across global supply chains.* [online] Available at: http://reports.weforum.org/toward-the-circular-economy-accelerating-the-scale-up-across-global-supply-chains/from-linear-to-circular-accelerating-a-proven-concept/?doing_wp_cron=1574709352.0650949478149414062500
- https://www.ellenmacarthurfoundation.org/our-story/the-team/team
- https://www.nasa.gov/centers/langley/news/factsheets/Aerosols.html