

THE CIRCULAR ECONOMY AND INDUSTRY 4.0 CONVERGENCE

Rafael CILOCI, PhD., Assoc.prof.
Technical University of Moldova

Abstract: The modern society is influenced by several challenges such as the degradation of nature, scarcity of natural resources, climate change that have a negative impact on the economy. Thus traditional-linear development is no longer possible, it is necessary to reset the whole process how to do business.

It is necessary to change the basic principles of business to complex ones, that include economic efficiency, but also ecology and sustainability. At the same time, Industrial Revolution 4.0 can provide a lot of technological changes which would contribute to the formation and development of the circular economy. Developing computing capacity, artificial intelligence, the Internet of Things, creating complex, sophisticated software and increasing speed of Internet can improve production processes by using more ordinary and cheaper materials, that are less harmful and can be easily recycled, reduce material costs and energy consumption, develop new businesses by processing waste and recycling goods. In this regard, Government institutions need to create a stimulatory legal-regulatory framework, to adopt quality standards that would take into account the impact on nature, to rebuild economy based on principles of the circular economy, provide incentives as different financial instruments, granting other benefits.

The Republic of Moldova is just at the beginning of these transformations and it is important to adopt proper regulatory legislation. Though we have to underline some deficiencies in the development of the circular economy, the most important are lack of financial resources and that the principles of circular economy are not promoted by the educational system and are not widely accepted as cultural values.

Keywords: circular economy, industry 4.0, digitalization.