diffusion-fundamentals.org

The Open-Access Journal for the Basic Principles of Diffusion Theory, Experiment and Application

Circular Economy – an introduction to a challenging concept (with a view on Uzbekistan)

Hans Wiesmeth

Saxon Academy of Sciences and Humanities, Leipzig, Germany
E-Mail: wiesmeth@saw-leipzig.de

(Received: 2023/08/07, Published online: 2023/08/07)

The presentation introduces and explains relevant concepts of a circular economy, including the concepts in discussion for Uzbekistan. The main focus will then be on the challenges associated with the implementation of a circular economy, again addressing some aspects and realities that are important for Uzbekistan. The connection of the presentation with diffusion processes stems from the observation that insufficient spreading of private knowledge and/or suitable social norms is responsible for at least some of the difficulties that can be observed in this context. The obvious research question tries to address these problems. Parts of the presentation are based on considerations in Wiesmeth (2018, 2020, 2021).

The concept of a circular economy emerged from various roots, with rising environmental awareness paving the way in the years following the release of "The Limits to Growth" by the Club of Rome in 1972. Pearce and Turner (1989) introduced the basic economic concept, which points to the fundamental functions of the environment in an economic system that must be sustained: the environment serves as a supplier of natural resources, as a recipient of all kinds of waste, and provides direct utility – through an attractive surrounding and beautiful landscapes, for example.

If the environment is no longer able to perform these functions, this has immediate consequences for many business activities: a shortage of water in Uzbekistan can seriously disrupt agricultural production; and exceeding the assimilative capacity of the environment as a receptable of waste, of greenhouse gases, necessitates costly efforts to clean up the environment and can severely impair all kinds of economic activities. According to the UNECE Environmental Performance Review on Uzbekistan (UNECE, 2020), the improper handling of municipal solid waste and chemicals continues to have a high environmental impact on air, water and soil.

Practical concepts of the circular economy originated from different technical schools of thought. One of them, industrial ecology, focuses on product design and manufacturing processes: already in the design of a product relevant environmental aspects should be taken into account (MAF, 2020), resulting in a "Design for Environment" (DfE). As countries and regions differ in terms of the availability of natural resources, in terms of the assimilative capacity of the environment, but also in terms of the level of environmental awareness, it is not surprising that a circular economy is usually understood differently by practitioners in different countries.

Business models play a particular role in most practical concepts: according to the Ellen MacArthur Foundation, "applying circular economy principles could unlock up to EUR 1.8 trillion of value for Europe's economy", and "business plays a central role in creating the systemic change required to reap the financial benefits of this transition" (MAF, 2020). Case studies referring to single-use food packaging, saving clothes from landfill, developing electric mobility systems, to name but a few, show the potential to do good business with innovative products and services in a circular economy.

Similarly, the Circular Economy Action Plan of the European Union (EU) emphasizes that "the transition to the circular economy will be systemic, deep and transformative", and "building on the single market and the potential of digital technologies, the circular economy can strengthen the EU's industrial base and foster business creation and entrepreneurship among SMEs". Moreover, "a whole new range of sustainable services will bring about a better quality of life, innovative jobs and upgraded knowledge and skills" (EU, 2020).

These "business-centered" views on the implementation of a circular economy are by no means limited to the highly industrialized countries. The circular economy concepts proposed for Uzbekistan, for example, also point to suitable business models. In this context, "the Strategy for Innovative Development of

Uzbekistan (2022-2026) aims to create an innovation ecosystem that will connect industry, regions, and scientific/higher educational organizations for sustainable growth", and "this transition can help economies diversify away from a dependence on exports of finite resources, reduce negative environmental impacts, and create new business opportunities and jobs" (UNECE, 2023).

It can obviously be said that most countries seeking to implement a circular economy are likely to emphasize these potential economic opportunities, probably in order to gain broad support from the local population. Stressing the role of business also helps to avoid the impression that a transition to a circular economy requires substantial resources from public sources, which is a similarly controversial issue.

But between the lines of these optimistic perspectives, it becomes clear that the transition to a circular economy is more than sometimes accompanied by disruptive changes in business, that various industrial branches will have to reduce their activities or even cease to exist. In addition, current business activities do not always meet the objectives of a circular economy. There are questionable exports of old electronic equipment to developing countries, there are similarly problematic exports of plastic waste to developing countries and emerging economies, including Uzbekistan, and there are sales of second-hand cars for reuse to customers in countries without sufficient possibilities to properly maintain these cars.

But developed countries are also violating their commitments to mitigate climate change, and car producers are using "defeat devices" to cheat on the actual emissions of their cars. In addition, "green washing" and moral self-licensing are used with environmentally friendly behavior in one context to justify less environmentally friendly behavior in other contexts, and finally there are questionable avoidance strategies with regard to the `polluter pays´ principle.

These thoughts and observations lead to the research question: what are obstacles to the systemic change that is deemed necessary for the transition to a circular economy and, even more importantly, what precisely is the role of business to achieve this systemic change? Why should a company turn to circular economy strategies, if it profits very well from the existing linear system? If there seem to be so many interesting business models in the context of a circular economy, why are they not yet visible on a larger scale? What are the challenges "to create an innovation ecosystem that will connect industry, regions, and scientific/higher educational organizations for sustainable growth" in the context of the Strategy for Innovative Development of Uzbekistan?

The issues that need to be addressed are often related to the dissemination of relevant information, to the dissemination of private knowledge and the gradual establishment of adequate social norms. Thus, business companies can have private knowledge about certain "Designs for Environment" (DfE), which they will use only, if it is in their legitimate business interest. Moreover, societal path dependencies appear to be real barriers to a smooth transition to a circular economy.

In summary, the need to align business interests to give more space to DfEs, the need to change societal path dependencies, including issues of moral self-licensing, through appropriate social norms, could be interpreted as a necessary systemic change to successfully implement a circular economy.

References

EU (2020) Circular Economy Action Plan: For a cleaner and more competitive Europe. Available at: https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en. Accessed August 2023

MAF (2020) Ellen MacArthur Foundation. https://www.ellenmacarthurfoundation.org. Accessed August 2023

Pearce D.W., & Turner R.K. (1989) Economics of natural resources and the environment. Johns Hopkins University Press.

UNECE (2020) Environmental Performance Reviews – Uzbekistan. https://unece.org/DAM/env/epr/epr_studies/ECE.CEP.188.Eng.pdf. Accessed August 2023

UNECE (2023) Uzbekistan is stepping up efforts to use innovation as a driver for the circular economy transition. https://unece.org/circular-economy/news/. Accessed August 2023

Wiesmeth, H. (2018) Stakeholder Engagement for Environmental Innovations. Journal of Business Research, 2020, 119, p. 310-320. First online published December 24, 2018. https://doi.org/10.1016/j.jbusres.2018.12.054

Wiesmeth. H. (2020) Systemic Change: The Complexity of Business in a Circular Economy. Foresight and STI Governance – Journal of the National Research University Higher School of Economics, 2020, 14(4), p. 47-60. https://doi.org/10.17323/2500-2597.2020.4.47.60

Wiesmeth, H. (2021) Implementing the Circular Economy for a Sustainable Development, Elsevier, November 2021 (online/print). https://doi.org/10.1016/C2019-0-04150-7