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Circular Economy – Utopia or Necessity?

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Tekst jest udostępniony do wykorzystania w ramach dozwolonego użytku.

Circular Economy – Utopia or Necessity? / Ekonomia cyrkularna – utopia czy konieczność ?

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ABSTRACT

More and more attention is drawn today to new economic models. They are supposed to give us a way out of the impasse we find ourselves in, brought on through years of rampant economic development based on intensive use of fossil fuels and other non-renewable resources. One exam-

ple of an alternative is the circular economy model, not just a university creation but – as in France – a strategic target of political activity.

KEY WORDS: circular economy, linear economy, industrial ecology,

The twentieth century allowed humanity to develop a linear economy, a model efficient in terms of growth but ineffective ecologically. In this economy I extract resources, including fossil fuels, I produce energy, and, using this energy, produce various products. I use the products and then afterwards throw them into the trash or burn them at an incineration plant which emits harmful substances.

Since the modern economic model is based on constant growth, at the end of the twentieth century people started to realize that it cannot go on indefinitely. More and more people concluded that “business as usual” will lead to depletion of affordable resources and of the very biological grounds of life—to the extent that we’re condemning humanity to fight wars over drinking water and food, as well as to unpredictable, violent climate change.

Many communities, businesses, and local governments started to undertake actions aimed at limiting the harmful health and ecological effects of this model.

The time has come to seek products and services which, already at the design stage, are meant to be utilized for

as long as possible, as well as a multiple transformations and recycling of natural resources, and the elimination of toxic materials and technological processes generating harmful emissions.

Positive social and environmental effects must be created at each stage of transformation: during disassembly, recycling, maintenance, or modernization, adapting the product or its particular elements and constitutive resources for a second use, either for

INDUSTRIAL ECOLOGY

„Industrial ecology is the study of material and energy flows through industrial systems”. Focusing on connections between operators within the ‘industrial ecosystem’, this approach aims at creating closed-loop processes in which wastes of ones serve as inputs for others, thus eliminating undesirable by-products. Industrial ecology adopts a systemic point of view, designing production processes in accordance with local ecological constraints whilst looking at their global impact from the outset, and attempting to shape them so they perform as close as possible to living systems. This framework is sometimes referred to as the ‘science of sustainability’, given its interdisciplinary nature, and its principles can also be applied in the services sector.

CRADLE TO CRADLE (OR A LOOP ECONOMY)

The Cradle to Cradle™ concept and certification proces, developed by German chemist and visionary Michael Braungart and American architect Bill McDonough, is a design philosophy which considers all materials involved in industrial and commercial processes to be raw materials, of which there are two main categories: technical and biological. The Cradle to Cradle framework focuses on design for effectiveness in terms of life-cycle. Cradle to Cradle concept eliminates the concept of waste, uses renewable energy, manages water use, promotes healthy ecosystems and respect of local impacts, promotes social responsibility.

tion, adopts eco-design and clean production, the use of renewable energy, consumption respecting the envi-

REGENERATIVE DESIGN

In the US, professor of landscape architecture John T. Lyle started developing from the 70s of XXs. ideas on regenerative design that could be applied to all systems, i.e., beyond agriculture, for which the concept of regeneration had already been formulated earlier. Arguably, he laid the foundations of the circular economy framework, which notably developed and gained notoriety thanks to McDonough, Braungart and Stahel. Today, the *Lyle Center for Regenerative Studies* offers courses on the subject.

al ecology and other concepts developed in the 1970s, especially since the great energy crisis in 1973. These

BIOMIMICRY

Janine Benyuys, author of *Biomimicry: Innovation Inspired by Nature*, defines her approach as 'a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems'. Studying a leaf to invent a better solar cell is an example. She thinks of it as 'innovation inspired by nature'. Biomimicry relies on three key principles: nature is a model to be emulated, nature lets judge the sustainability of our innovations, nature's value for men is not in what we can extract, but as our source of knowledge.

the *Blue economy* initiated by the Belgian businessman Gunter Pauli.

The source of most of these concepts is the observation of natural ecosystems, in which there is no waste; everything produced by nature is used by someone or

a similar or a completely different purpose.

A circular economy, therefore, means trying to use as little natural resources as possible, using renewable resources in such a way as to guarantee their regeneration, and using wastes anew as resources and processing those wastes without negative externalities.

The idea of *circular (loop, circulating) economy* derives from *industrial ecology* and other concepts developed in the 1970s, especially since the great energy crisis in 1973. These concepts include *Cradle to Cradle*, a theory by Michael Braungart and William McDonough, John T. Lyle's *Regenerative design*, Janine Benyuys's *Biomimicry*, and

something in another cycle of life. Research on the *circular economy* was called *circular economics*, described as early as 1976 by the Swiss architect Walter Stahel and the Swiss economist Genevieve Reday in a report for the European Commission, "The Potential for Substituting Manpower for Energy", which was published in 1982 as a book, "*Jobs for Tomorrow: The Potential for Substituting Manpower for Energy*".

Work on putting these principles into practice developed in the twenty first century. Promoting this work was the basis of the eleventh five-year economic plan for China from the year 2006. In 2010 the Ellen McArthur Foundation was created in England, and its goal was to promote and develop this idea. McKinsey developed a report for the Foundation called "*Towards the Circular Economy*," pointing out the potential of multi-billion savings for the world economy, and in December 2012 the European Commission published a document entitled *Manifesto for a*

Resource Efficient Europe, which states that "in a world of growing pressure for resources and the environment, the European Union has no other choice but to strive for transformation to efficient use of resources and eventually to a regenerative circular economy".

In France the first publication on the topic of *circular economy* appeared in 2009 by Jean-Claude Levy, entitled "*Circular economy: an urgent ecological necessity?*". It presented China's experience and inspired considerable debate in the media. This idea was also one of the subjects of the so-called Grenelle of the Environment in 2007, a debate which included representatives of five social sectors: the state, local governments, non-governmental organizations, employers, and employees.

BLUE ECONOMY

Initiated by Belgian businessman Gunter Pauli, the *Blue Economy* is an open-source movement bringing together concrete case studies, initially compiled in an eponymous report handed over to the Club of Rome. As the official manifesto states, 'using the resources available in cascading systems, (...) the waste of one product becomes the input to create a new cash flow'. Based on 21 founding principles, the *Blue Economy* insists on solutions being determined by their local environment and physical/ecological characteristics, putting the emphasis on gravity of the primary source of energy. The report, which doubles up as the movement's manifesto, describes '100 innovations that can create 100 million jobs within the next 10 years', providing many examples of winning South-South collaborative projects.

In February 2013 the Institute of Circular Economy was formed. It was something between a think-tank and a lobbying group, incorporating enterprises, universities, research institutes, social organizations, public institutions, local governments and experts, especially entities related to the waste management sector.

Circular economy is slowly becoming the subject of government policy. This can be seen by it being one of five subject fields at the September 2013 Environmental Conference, an annual coordination and policy meeting on environment and sustainable development.

REFERENCES

1. Ellen MacArthur Foundation, The circular model – brief history and schools of thought, Ellen MacArthur Foundation, <http://www.ellenmacarthurfoundation.org/circular-economy/circular-economy/the-circular-model-brief-history-and-schools-of-thought> (access: July 23, 2015).