



# Circular and Sharing Economy Practices and Their Implementation in Russian Universities

B. A. Nikitina<sup>(✉)</sup>

Samara State University of Economics, Samara, Russia  
belanik@yandex.ru

**Abstract.** This article is devoted to the consideration of the impact of the digital age on modern Russian society in the environmental aspect, the basis of the study were the materials describing the environmental initiatives carried out today by students at universities across the Russia. It should be noted that the most important impact of digitalization is the access of the population, especially young people, to information on examples of best practices to resolve environmental problems abroad. It is this access that made it possible for young people to initiate projects that are more advanced than what the Russian state offers today in the field of waste management. The second important aspect of the impact of digitalization on the solution of environmental problems is the possibility of using virtual communication for the organization of circular economy and sharing economy practices that contribute to the reduction of waste. Despite the high potential of virtual platforms in the optimization of reverse logistics, modern Russian society has not yet matured to make full use of it. This becomes especially clear when comparing the best practices available in Russia, implemented by student teams, with what is proposed by different institutions of the EU. The article points out that transformation of organizational culture of universities would be more important than optimization of waste management, and it may have more significant environmental, economic and social benefits. However, to reach this level, it is necessary to develop a specific sustainable systems thinking.

**Keywords:** Circular/sharing economy · Waste management

## 1 Introduction

The level of development of environmental education in the Russian Federation has never been high, but specific scientific and educational activity was significantly higher in the 90s of the 20th century. Later the concept of Education for Sustainable Development appeared, but it had not any serious positive impact on educational landscape in Russia, where environmental aspects of life studying with minimal attention. At the same time, the development of Internet communications has brought to life the younger generation of Russians a lot of information coming from developed countries, many of them personally visited these countries and noticed serious differences in the state of the environment in general and in the field of waste management in

particular. The ideas of the Sharing and Circular economy, which play a very important role in reducing the volume of household waste, are little known and innovative for Russians. At the same time, it is the increase in the amount of household waste in recent years, as well as the lack of development of management of this process has led to an aggravation of the environmental crisis, which particularly affected the residents of cities.

The waste management system, mal-organized in Russia, finally came to the critical point with wide public protests. While EU develop its new Waste Framework Directive [4], working on extended producer responsibility and waste prevention activity, Russia making new system of pseudo taxation without changing of core waste treatment institutions. While developed countries create waste prevention programs using power of crowdsourcing, Russian population was put aside of the discussion about planned transformations. Conceptions of Circular and Sharing Economy hardly discussed in Russia as a way of waste prevention. Russians have a lot of spontaneous practices of resources savings, but no legislative support or state investments in such kind of projects. Civil society again is ahead of state in that field, especially an environmental movement, which started to develop and implement ideas of Circular Economy in a casual life of population and first of all – among young people, especially students.

A Circular Economy is an economic and industrial system where resources are kept in use for as long as possible and it has several layers of its execution. At first glance, the circular economy is the recycling of products and their elements, as well as the extension of the life cycle of various things that can be considered as the responsibility of industrial corporations arising from the environmental policy of the state. In this case, consumers, who are in fact the main engines of economic development, turn into passive observers, and models of environmentally friendly and socially responsible behavior will be designed and imposed on the population by corporations and the state. However, it is important to see not only business models and strategies for the transition to a circular economy, but also the development of society, social prerequisites for the transition to sustainable consequences and prerequisites, the perception of the population and the impact on society as a whole.

Even the earliest Circular Economy concept of 3R actions (recycle, reuse, reduce), which is in large measure embodied in the developed countries, still not sufficiently implemented in Russia, therefore it needs the disclosure of social mechanism of its organization. That mechanism includes material infrastructure, laws, social institutions emerged in this context and different kinds of relationships between people and those sophisticated environment. The role of legislation, local community, private household and individual culture in this process has its matter [8, 9].

After the implementation of the concept of 3-R there are concepts with a much larger number of “R”: 6-R, 8-R, 10-R with following demands: recycle, reduce, recover, reuse, rebuild, redesign, remanufacture, refurbish, repair, rethink, refuse [4]. These ideas were invented for industrial production, but not only. Some of circular economy levels demand including more and more social compliance and solidarity and human creativity in the same time [11]. These ideas are implemented in the urban design, in the way the infrastructure for everyday life of people is formed, how local communities are involved in innovative projects [13]. The development of a variety of virtual sharing platforms and the provision of access to the Internet EP are also

important factors for the development of this sphere [2]. All those conditions are important for implementation of following principles of Circular Economy:

- (1) Slowing resource loops: Through the design or consumption of long-life goods and product-life extension (i.e. service loops to extend a product's life, for instance through repair, remanufacturing), the utilization period of products is extended and/or intensified, resulting in a slowdown of the flow of resources.
- (2) Closing resource loops: Through recycling, the loop between post-use and production is closed, resulting in a circular flow of resources.
- (3) Resource efficiency or Narrowing resource flows, aimed at using fewer resources per product [7].

All these principles can be realized being both a consumer and a producer, which mean not only formation of clear understanding of a new consumer ethics, but turning citizens into designers of their own life on the scale of their own household or organization of their own community [12]. Thus, it is not enough to study consumer preferences that stimulate the circulation economy, and how they are formed in the population. It's necessary to understand how people can implement their own paths that contribute to "Slowing resource loops", "Closing resource loops", or "Narrowing resource flows". The study of job creation opportunities for the implementation of the principles of Sharing and Circular Economy have to be a special area. That's why it's important to consider in more detail what prosumerism is and how innovative human qualities can contribute to the development of the Circular Economy in all its aspects taking in consideration some of modern theories [15]. But the most important thing is to move to the part of the Circular Economy that concerns the change of goal-setting, which connected very closely with theories of moral economy, the economy of merit, their existence today at various levels (global, national, corporate, municipal, individual) and the prospects for their development.

An important area of research is the analysis of the impact of digital technologies on the individual possibilities of environmental optimization of their own life – in relation to the organization of movement, food, sanitary and hygienic standards of living conditions, their own health, etc. and accumulation of the cases of best Circular and Sharing economy practices. Sharing economy which often also referred to as the Collaborative economy usually defined as a business models meeting following criteria: interaction includes three parties – the service provider, the online platform and the customer; goods, services or resources provided on a temporary basis, they are otherwise unused and they can be offered with or without compensation (i.e. for profit or non-profit/sharing) [10].

## 2 Methodology

The study is based on a comparative analytical methodology, within which a double comparison is carried out. In this article we rely on the information collected as a result of the project "Green universities of Russia" [6]. First of all, the best environmentally friendly practices carried out in modern Russian universities that have joined the Association of Green Universities were compared. Secondly, these practices are

compared with the some case studies from the sphere of circular economics, given on the website-catalog of the environmental friendly inventions [5]. Such a comparison makes it possible to determine the stage of comprehension, even by the most progressive representatives of modern Russian universities, of the principles of circular and Sharing economy, as well as to reveal the barriers to their development [10].

### 3 Results

The Association of “Green universities” of Russia, which is an All-Russian youth ecological Association of representatives of student teams of Russian universities, was established in 2017 by the all-Russian green Movement “ECA” and the Foundation for support of youth initiatives “ERA” (Association of “green” universities of Russia) [6]. Due to the lack of state incentives to implement the principles of environmental management in educational institutions, the Association “Green universities” actually took over the function of ideological, theoretical and methodological support for education for sustainable development in this area.

The Association began to gain strength by 2019, covering 33 regions and 50,000 students from 288 Russian universities as participants of the action “Ecological quest”. Some of these universities participate only in the actions proposed by the Association, while others are more independent, working in several areas of environmental optimization. Thus, 58 universities that are members of the Association do not just hold one-time actions, but have permanent waste separation systems.

The movement “Green universities of Russia” has absorbed the most active in the environmental aspect of the Russian students and faculty. In this regard, the experience of universities, collected in the book “Environmental initiatives of modern Russian universities”, can be considered representative of the most competent and effective actions taken by social institutions of modern Russia. Using this collection of case studies for analysis, we consider the experience of 14 universities, 9 of which implementing separate waste collection nowadays and 5 realizing alternative environmentally friendly practices.

Among the 9 universities under consideration, in four cities - Arkhangelsk, St. Petersburg, Rostov-on-Don and Kaliningrad waste separation was organized by student organizations independently, and in five cities (Astrakhan, Kazan, Moscow, Rubtsovsk, Nizhny Novgorod) it was the result of joining the initiative of the “ECA” movement. In all cases separately collected were plastic, paper, aluminum and glass waste and in case of St. Petersburg 8 more other types of waste are gathering separately. As for small universities the collection of glass and metal waste separately is unprofitable and inconvenient, since it is too slow. In 4 cases, the collection of accumulators is also carried out.

In 4 cases, University teams received small grants from the ECA Movement to organize a separate collection, but in most cases the allocation of separate fractions and their sale allows to pay for the cost of installing containers. Participants pointing out that in cases of serious legal study of the issue, it is possible to significantly reduce the payment for the waste. Despite the fact that the projects are mostly non-commercial in nature, in three cases, volunteers involved in the control of the process are paid, and in

one case (in Rostov-on-Don University) municipal waste separation is carried out in the form of a commercial project that brought profit to its initiator. In all the described cases, the organization of separate waste collection became a trigger of the students environmental culture growth, stimulated other environmental actions – tree planting, bookcrossing and participation in other environmental actions.

In most cases, the organizers face problems of insufficient understanding of separate waste collection environmental importance not only by the University administrations, but by the students themselves. That problem could be overcome quickly enough, but requires perseverance and moral stability of the organizers and volunteers. The question of fire safety immediately was raised in large universities, but in presented cases mostly it was solved quickly after negotiations with the administrative staff. Project participants often point to administrative and regulatory barriers to the implementation of their activities, as well as the importance of cooperation with recycling organizations. In some cases, activists are quite satisfied with the non-commercial nature of the interaction, but in half of the cases, the initiators seek to obtain economic benefits from the delivery of recyclables.

Another important conclusion is that great importance for the success of the projects belongs to by the presence of a cohesive team, ready to persistently implement the plan and take responsibility for voluntary duties.

As for non-standard environmentally friendly practices, these include the project on water saving (St. Petersburg), the project on book-crossing in combination with the practices of collecting waste paper (Moscow), the project on collecting clothes (Moscow), as well as projects on the exchange of folders for papers (Kazan), the production of pens and notebooks from used posters (Moscow). Of all these projects only the last one uses the terminology from the sphere of Circular Economy, rightly naming activities upcycling, means a secondary use of materials with an increase in their cost, but without processing as raw materials. At the same time, the projects of office supplies exchange and charity gathering of clothes can be attributed to practices of Collaborative/Sharing Economy.

## 4 Discussion

The given experience of implementing environmental innovations in universities should be considered as the diffusion of socio-cultural patterns in the field of environmental management from developed countries to Russian society. These innovations meet both support and resistance from different social subsystems. In some cases, a negative factor is the low level of understanding of the meaning of separate waste collection, which is combined with the antisocial behavior of some individual actors, as a result, the waste is poorly separated and requires additional sorting. Due to the fact that environmental education works effectively as a tool for changing behavior and ensures compliance with specific requirements for waste collection, the initiators of student projects are ready to involve wider segments of the population in their projects, bringing “eco-points” outside the University campuses. It is interesting that the technological tools are seen by the organizers of the projects less important, so the press for PET bottles they consider as an extra purchase.

Generalizing, we emphasize that in most of the above cases the principles of circular economy have been developed, but at the lowest level of this approach, when the loop is closing by involving resources in recycling. Higher levels of circular economy are less represented, only in three cases there is a method of extending the life cycle of products – for example, the collection of clothes, as well as the collection of folders for papers. Extends the life cycle of products and the use of books for their transfer to the public in the framework of bookcrossing.

In each of the cases of extension of the product life cycle, we can talk about the implementation of the principles of non-commercial type of sharing economy. As for the separate collection of waste, among the cases in a single case, an example of commercialization is presented.

It should be noted that according to some research [1], students are more likely to discuss the possibility of optimizing those aspects of the circular economy that are closer to them as a result of their professional education. It is not surprising that most students turn to the level of recycling, i.e. separate waste collection for their subsequent processing. At the same time, the organizers of the project pay great attention to interconnections with the waste management subsystems, because they have realized from their own experience how important it is to be able to deliver the collected recyclables to the place of processing. As the research emphasizes, it is “reverse logistics” that is crucial for the successful development of closed cycles [3]. At the same time, it should be recognized that the approaches of social design and consumer selectivity are poorly developed, which, as studies show, requires more active information impact on the population (so called Persuasive Communication) for the formation of Pro-Circular Values [14].

At the same time, we note the lack of examples of the design of social processes in order to change the very organization of the economy, preventing the production of waste. Also at this stage, there is no special attention to the environmental characteristics of goods consumed by internal institutions; there is no understanding of the need for greater emphasis on environmental criteria in the procurement of certain types of goods by the University.

In this regard, we point out that the hierarchy of waste management directly indicates that the primary and most effective activity is not sorting waste for their further processing, but changing the ways of organizing life, based on the analysis of alternative ways to achieve terminal goals [7, 16].

In the field of wildlife protection, there are so-called “umbrella species”, which include such animals as tigers or bears. In their protection, there is a side effect when both safety and improvement of living conditions are provided to all species of animals and plants that are part of the ecosystem of the umbrella species.

A similar situation exists in the development of the circular economy. Reducing the amount of plastic entering the landfill can be achieved through its transfer to recycling, but the organizational culture of the University can lead to minimizing the appearance of plastic debris or a complete ban on its use, which will not only bring more environmental benefits, but also can create new jobs and change the understanding of the meaning of using this invention. However, at this stage, the initiators of environmental projects in Russian universities not only do not swing at the level of rethinking the organizational culture, but also probably do not think.

## 5 Conclusion

As a result of the analysis, the following conclusions can be drawn:

- the activity of modern youth in the field of waste management is growing, in the University communities there is a variety of forms of environmentally friendly projects implemented by student teams;
- students' attention is focused mainly on the least effective forms of optimization, such as separate waste collection, poorly changing their way of thinking
- there is a clear lack of implementation of innovative models of resource management, allowing to prevent the occurrence of the problem, and not to stop it after the fact;
- share projects implemented by students have the character of charity, which does not include the transformation of their own way of life, its greening;
- the revealed trends indicate a pronounced backwardness of modern Russian household practices from the organization of daily life in developed countries, one of the reasons for which can be considered a low level of environmental education in Russia, the lack of awareness of young people about such concepts as circular and sharing economy, and their practical socio-environmental potential.
- during the implementation of projects, digital platforms play a minor role and their function is mainly to inform students mostly about environmental activity in Russia, and much less about circular and sharing economy innovations and mode of thinking.

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