

CIRCULAR ECONOMY AS A NEW MANAGERIAL APPROACH

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Abstract: Circular economy is a concept that is shifting from a linear economy system to a "ring" system in terms of a product or raw material reuse, its reprocessing and recycling. The circular economy is a fulfilment of sustainable development. It has an impact on consumers, non-profit organizations, government institutions, cities and municipalities, but its main actors are companies. It is linked to invention, innovation and investment. It is the basis for new business models and is a new management approach that opens up new business opportunities.

Keywords: circular economy, sustainability, business model, managerial approach

1 Introduction

Circular economy reflects the transition from the current model of the linear economy, dependent on the high consumption of non-renewable resources. Integrating circular economy into corporate business brings a number of benefits associated with new business models, marketing, corporate culture, but also profitability and competitive advantage. On the other hand, it presents a number of challenges in the form of limited opportunities to use new technologies, innovations, changing product features and their lifecycles, and others.

The aim of the paper has been to clarify the essence of circular economy and some of its aspects that we consider to be essential from an economic, enterprise and social point of view. Following the above mentioned, our ambition was to present the circular economy from the point of view of the business sphere in Slovak conditions.

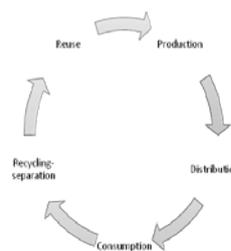
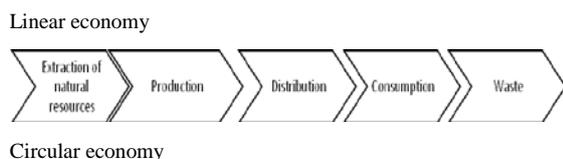
2 The essence of circular economy

2.1 Definition of circular economy

Pearce and Turner presented the concept of circular economy in their work Economics of Natural Resources and the Environment in 1989. They pointed out that a traditional open-ended economy was developed with no built-in tendency to recycle, which was reflected by treating the environment as a waste reservoir [6].

The circular economy is an interpretation of instructions how to leave zero or at least the minimum ecological footprint, both for personal and production consumption. According to Rusko and Pietrucha, the circular economy is based on the idea that all product and material flows could be re-integrated into their cycle after their use, when they become new sources for new products and services [5]. Thus, it enters into the linear economy model as the "circle" principle, in terms of reuse of the product or raw material, its reprocessing and recycling (Figure 1). Waste is perceived here as a source.

Figure 1. Shifting from a linear economy to a circular economy



Source: [5].

An effort to promote efficient resource utilization, pro-environmental oriented innovations, environmentally - friendly products and services, as well as the application of pro-environmental managerial tools like voluntary EMS or EMAS tools are all parts of circular economy.

Within circular economy, the following key elements have been identified:

- the favoritism of regenerative (renewable, reusable and non-toxic) sources
- the use of waste as a source,
- the design that allows products re-use and prolongation of their life cycle,
- to preserve and extend what has already been produced,
- collaborative value,
- introduction of digital technologies,
- the prices or other feedback mechanisms should reflect real costs.

According to the Slovak Institute of Circular Economy - INCIEN the circular model is to ensure the competitiveness of the countries, their stable economic growth and healthy environment [7]. The yield in circular economy is based on the efficient use of natural resources, achieved by the effective valuation of used materials, products and components. Their constant return to the technology cycle presents the closure of material flows. This minimizes the waste, cost of material inputs and energies needed to produce new products. The main elements of this concept are the utilization of renewable energy sources, eco-innovations, rental, sharing and support of local business.

The circular economy thus represents a regenerative system that minimizes waste, emissions and energy deficiency by slowing, closing down and narrowing material and energy flows.

2.1 Selected elements of circular economy

Following the essence of circular economy, we consider it relevant to mention the category of sustainability and sustainable marketing, responsible consumer and reverse distribution.

Sustainability is a global trend that includes the entire business sphere and all aspects of life. It makes business meaningful and is related to constant improvement, innovations and social responsibility. It is an important stimulus of product development and production. It embodies itself with products whose development, production, operation, consumption and disposal are less demanding for raw materials and energy consumption, produce less waste or contain less harmful substances. The importance of the individual dimensions of sustainable development reflects: (1) the environmental aspect that is its basis, (2) the economic aspect as a tool for its achievement, and (3) the social aspect that is the goal of sustainable development. Circular economy is a system that is "more sustainable" than a linear economy.

Sustainable developments affect the entire industry. Update in a production - consumption system in the environmental and

social context allows for social responsibility to be exercised in exchange. This situation has led to the emergence of social marketing. According to Kita, sustainable marketing takes into account the environmental impact of products and marketing activities and provides a complex situation about them to a customer [3]. Oreský characterizes sustainable marketing as a process of creating, communicating and delivering value to customers, where natural capital and human capital are protected or improved/ enriched throughout the mentioned processes [4].

Sustainable marketing can be described as a bridge between firms and consumers based on win-win strategy. With regard to sustainability, it is also necessary to guide consumers towards such behavior. This is the principle that if consumers do not start to behave responsibly and environmentally friendly, environmental companies will not have the chance to succeed in the market with such strategies.

Several authors seek reasons for environmental behavior based on models. S. Schwartz is among the pioneers of this effort, who assumed that the only direct determinant of pro-social behavior is personal standards of an individual, such as feelings of strong moral duty in people making an effort to act in favor of society [2]. Vokounová also says that sustainable behavior depends on the characteristics of a person (such as his/her knowledge, responsibility, awareness of circumstances) and on the society in which he/she lives [8].

Change in the value system of people is also one of the conditions for fulfilling the essence of reverse distribution. While forward-looking distribution is primarily concerned with the delivery of finished products to consumers, reverse distribution ensures that the products or materials are moved back from the consumer to the production process to exploit their residual value.

Reverse distribution is the process of transporting products from their typical final destination to the point of capturing a value or proper disposal [1]. Its role is related to the consumption of non-renewable resources and their renewal. The use of non-renewable resources requires the closing of the material flow cycle. Reverse distribution diverts these resources from disposal in municipal landfills or waste incinerators and returns them back to circulation. It can be assumed that, in the future, reversal distribution can play an equally important role as a forward-oriented distribution. We would like to add that the role of reverse distribution could also be seen in the process of energy valuation of materials.

Approaches of individual authors to reverse distribution differ, depending on a number of factors, such as, for example, the nature of the industry, the subjects of distribution, the tasks or, for example, the activities. In these definitions, two key aspects of reverse distribution - ecological and economic - are being pursued at different intensities. Both aspects are significant in the business and monitored based on legislation and economic objectives. An important role here is the marketing, its tools, especially the product, its properties, design, and communication, which affects the economy of reverse distribution and its effects.

3 Research into the introduction of a circular economy system into the practice of Slovak business entities

3.1 Research project

Following the theoretical background and trends in the circular economy, we conducted an empirical research in September-October 2017 to observe the situation with the implementation of its elements within the companies established in the Slovak business environment. We addressed 500 domestic and foreign companies. The survey involved 180 businesses (n = 180). The return on questionnaires was 37.6%. The survey was conducted using the CAWI method and a standardized online questionnaire. The online questionnaire was programmed so that it could not be sent back incomplete. Respondents' responses

were automatically recorded in the online SQL database. This solution, in addition to ongoing monitoring, also allowed flexible evaluation of partial results.

Although the issue of circular economy affects all subjects, following the focus and purpose of our contribution, only the business entities have formed our sample according to the criterion of size (number of employees), scope, legal form and revenues.

In terms of size, microenterprises (with less than 10 employees) formed 30% of the sample, small enterprises (10-49 employees) formed 20%, medium-sized enterprises (up to 100 employees) formed 40% and 10% formed large corporations with more than 100 employees. In terms of determining the scope of the company, we proceeded from the national statistical classification of economic activities SK NACE rev. 2 (Table 1). From the point of view of legal form, business entities, both physical and legal entities, were addressed, 10% of which were companies with foreign ownership and 90% were Slovak entities.

Respondents were the owners of the companies, the executive officers and the directors. Revenues from all the survey participants ranged from EUR 0.1 mil. - 100 mil.

Table 1. Respondents' scope of business

Category	Amount (in %)
Agriculture, Forestry and Fishing	15
Industrial Production	35
Construction	30
Wholesale and Retail Trade	38
Transport and Storage	15
Accommodation and Catering Services	12
Information and Communication	4
Financial and Insurance Services	6
Administration and Support Services	25

Source: authors' own processing

The aim of the survey was to clarify and assess the situation related to a circular economy in the business environment in Slovakia. Based on that, the main research question has been formulated:

Q0: What is the situation in the field of introducing the circular economy system into the practice of Slovak enterprises?

From the main research question, the following partial descriptive research questions have been formulated through structured genesis:

Q1: What are the motives of Slovak enterprises to introduce a circular economy system?

Q2: How is circular economy introduced into the practice of Slovak enterprises?

Q3: What are the differences in the implementation of the circular economy system in the practice of domestic enterprises compared to the foreign ones doing business in Slovakia?

Q4: What are the benefits and problems associated with introducing the circular economy system in conditions of Slovakia?

In formulating the conclusions, we relied on the hypotheses that we established on the assumption that, in the conditions of the Slovak enterprises, circular economy is only in the starting progress and that the necessary tools and conditions are lacking in its implementation:

H1: Circular economy is not established in Slovak enterprises because of lack of knowledge, insufficient support and high financial, technical and personnel demands.

H2: The prerequisite for a more efficient implementation of the circular economy system in the practice of Slovak enterprises is higher awareness, culture, state support and competitive pressure.

3.2 Results and discussion

The questionnaire, we used to collect the data in the survey, consisted of the questions divided into the following areas:

- Knowledge, awareness of circular economy.
- Situation in circular economy in practice.
- Specification of the elements of circular economy in practice.
- Benefits and shortcomings of the circular economy system from the point of view of enterprises in Slovakia, motivation and preconditions for its introduction.

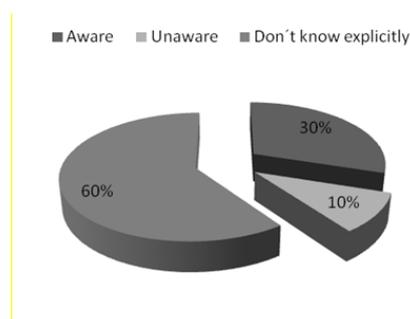
Knowledge, awareness of circular economy

From our point of view, it was interesting to note that only 30% (54) of the addressed enterprises explicitly understood the term "circular economy". There was no definite answer to 60% (108) of the addressed enterprises and 10% (18) did not know what this term meant (Graph 1). What is more, from those enterprises that understood the term "circular economy", 30% (16) were foreign ones doing business in Slovakia. However, subsequently, the situation with regard to the knowledge of circular economy improved and the respondents correctly connected it to the use of renewable energy sources, separation, economic and energy recovery, waste utilization, and so on.

Enterprises with experience in this field worked in agriculture (30%), industrial production (50%), construction (10%), wholesale and retail (10%).

Those enterprises that have understood this concept, have pointed to the relevant systems they have in place in their processes and activities, legislative measures, and participation in expert conferences on this topic.

Graph 1. Awareness of circular economy



Source: authors' own processing.

Situation in circular economy in practice

As a result of the situation regarding the introduction of the circular economy system, the enterprises involved have found that, when implementing it, legislation (90%), internal standards (70%), such as corporate guidelines, ethical codes, visions and missions, other norms of behavior or corporate culture, taken from a parent company, have been taking into account. In addition, they also cited the reasons for the implementation of this system to monitor foreign trends (52%), the introduction of EMAS voluntary tools (35%) and green product labeling (10%). Only two of the addressed enterprises have had the right to use the ecolabel (Table 2).

Table 2. Situation in an introduction of the circular economy system

Measures and Tools	Amount (in %)
Legislation	90
Internal Standards	70
Foreign Trends	52
EMAS Voluntary Tools	35
Eco-labelling	10

Source: authors' own processing.

Specification of the elements of circular economy in practice From the point of view of the specification of circular economy in practice, the following elements of the system have been the most common in the respondents' answers:

- (1) renewable energy sources (pellets, bio-waste, municipal waste) - 70%;
- (2) environmental innovations related in particular to waste, its collection and sorting - 45%;
- (3) waste heat utilization system (electricity generation for own use, aquaculture, refrigeration of own production capacities, air conditioning) - 30%;
- (4) green accounting - 30% and
- (5) green office - 30%.

Of the other elements of circular economy, 15% of the answers has demonstrated the use of rent (cars, energy, and laundry). The single addressed enterprise has not been used sharing economy (Table 3).

Table 3. Specification of an introduction of the circular economy elements

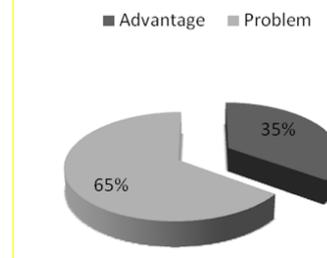
Element of Circular Economy	Amount (in %)
Renewable Energy Sources	70
Green Innovations	45
Waste Heat	30
Green Accounting	30
Green Office	30
Rental	15
Sharing Economy	0

Source: authors' own processing.

Benefits and shortcomings of the circular economy system from the point of view of enterprises in Slovakia, motivation and preconditions for its introduction

The introduction of a circular economy system has been identified by the addressed enterprises as a problem (65%) rather than a benefit (35%) (Graph 2).

Graph 2. Attitudes to the circular economy system



Source: authors' own processing.

The greatest deficiency of this system is seen by the addressed respondents as lack of transparency (insufficient or missing legislation and awareness) - 90%, rising costs of acquiring new technologies - 85%, lack of qualified workforce in relation to new technologies - 60%, increased education costs of employees - 50% and "bullying" and insufficient motivation from the state - 50% of respondents (Table 4).

Table 4. Shortcomings associated with the introduction of circular economy

Shortcomings associated with the introduction of circular economy	Amount (in %)
Lack of Transparency	90
Rising Costs of Acquiring New Technologies	85
Lack of Qualified Workforce	60
Education Costs	50
State Interference	50

Source: authors' own processing.

The answers of foreign enterprises doing business in Slovakia are worth mentioning. They pointed to a number of problems associated with the introduction of this system in the business environment. These shortcomings were mainly associated with

the problematic legislation, state bureaucracy, and lack of access to credit, lack of qualifications of the workforce, low environmental awareness in corporate culture, lack of awareness from the state and education.

Addressed respondents considered the greatest benefits associated with introducing the circular economy system the following: new business opportunities - 90% and the same 90% savings in costs. In addition, a better image and a favorable public opinion were considered as the benefit by 70% of the respondents. Among other benefits of this system introduced in practice, higher growth were added - 30%, as well as competitive advantage - 30%, new markets - 20% and higher product quality - 20% (Table 5).

Table 5 Benefits associated with introducing the circular economy system

Benefit associated with introducing the circular economy system	Amount (in %)
New Business Opportunities	90
Savings in Costs	90
Image and Favorable Public Opinion	70
Higher Growth	30
Competitive Advantage	30
New Markets	20
Higher quality production	20

Source: authors' own processing .

As measures to improve the situation in relation to the introduction of a circular economy system, addressed enterprises would welcome better transparency in legislation, awareness, motivation on the basis of waiving the various fees attached to this system, improving conditions linked to the use of new technologies (e.g. access to credit) and quality education.

Both hypotheses can be confirmed.

Summary

The circular economy as a global trend gradually becomes part of entrepreneurship and business activities in the conditions of Slovakia as well. It is not only the basis for new business models, it is also a new management approach, bringing new technologies, inventions and innovations. Finally yet importantly, it is linked to the emergence of new business and job opportunities.

Circular economy is a term that is often discussed in the countries of the European Union. This is apparently because of high degree of environmental awareness among the public as well as among owners and managers of companies and the corresponding conditions for the introduction and use of the circular economy system. According to Slovak INCIEN (2017), the environmental awareness of citizens in Slovakia is insufficient and the notion of "circular economy" is still unknown, although some individuals, companies, non-profit organizations and ministries have already begun the process of changing perceptions and setting the system up.

In the Slovak business environment, we can meet various "circular approaches", which are mainly used for reasons of cost reduction, lack of raw materials and their high price or pressure from customers and / or competitors. Typically, however, there are measures to reduce costs and are therefore primarily strongly economically motivated. However, with shifting to circular economy, they have little or no common features and have been approaching it only marginally.

Changing this situation will require, besides traditional measures in the form of legislative action, also a number of systemic measures. They include, in particular, the promotion of eco-investments and eco-innovations, the increase of recycling rates, the stimulation of efficient resource utilization measures, the promotion and use of eco-design, or the intensive communication of the issue of circular economy to public. In

addition, the latter will require increased awareness, education of public (consumers, employees) towards the topic of the circular economy. Also, Slovakia will have to prepare for changes in the economy related to this trend and set a strategy for shifting and introduction of circular economy at both macro and micro levels.

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