

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
UKRAINIAN-AMERICAN CONCORDIA UNIVERSITY**

School of Management and Business
Department of International Economic Relations, Business & Management

Bachelor's Qualification Work

Circular economies opportunities and challenges

(On the basis of Business Media Network LLC)

Bachelor's student of

Field of Study 29 – International Relations

Specialty 292 – International Economic

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Research supervisor



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Abstract

The need to modernize the existing traditional linear economic system is an acute new challenge to the world order. The purpose of this empirical study is to examine the circular economy as a new stage in the development of the concept of sustainable development and the green economy in particular, as it allows economic growth to exist simultaneously with environmental restoration and care. The paper examines and analyzes the evolution of the concept from the first theoretical foundations to a comprehensive sector of the economy with a wide range of services, and also explores the existing presence of implementation of aspects of this system in the world. The case study focuses on an investment startup that aims to provide working capital to small and medium-sized businesses in Ukraine. The data was collected through observations, surveys, and document analysis. The results of the study show that it is possible to meet the needs of the growing global population, as well as economic growth with increased incomes, through the circular economy. The study highlights the benefits of applying circular economy concepts that can improve business entry, create huge opportunities for modernizing production, and introduce industrial innovations, ensuring annual GDP growth.

Keywords: circular economy, sustainable development, recycling, reuse, resource management, pollution, innovation, investment.

Анотація

Необхідність модернізації наявної традиційної лінійної економічної системи постає гострим новітнім викликом світового устрою. Метою цього емпіричного дослідження є вивчення циркулярної економіки як нового етапу у розвитку концепції сталого розвитку та зеленої економіки зокрема, оскільки це дозволяє економічному зростанню існувати одночасно з відновленням довкілля та турботою про нього. У роботі розглядається та аналізується еволюція концепції від перших теоретичних засад, до комплексної галузі економіки з широким спектром послуг, а також досліджується наявна присутність імплементації аспектів цієї системи в світі. Кейсове дослідження присвячене інвестиційному стартапу, що має за мету завести оборотний капітал у малий та середній бізнес України. Дані зібрано шляхом спостережень, опитувань, аналізу документів. Результати роботи показують, що можливість задовільнити потреби зростаючого

населення планети, а також економічне зростання із збільшенням доходів – існує за допомогою циркулярної економіки. У ході дослідження зазначено переваги застосування концепцій циркулярної економіки, що можуть покращити введення бізнесу, створити величезні можливості для модернізації виробництва та впровадження промислових інновацій, забезпечуючи щорічний приріст ВВП.

Ключові слова: циркулярна економіка, сталий розвиток, переробка, повторне використання, ресурсний менеджмент, забруднення, інновації, інвестиції.

PHEE-institute «Ukrainian-American Concordia University»

School of Management and Business

Department of International Economic Relations, Business and Management

Educational level: **bachelor degree**

Specialty: **292 “International Economic Relations”**

Educational Program **“International Business”**

APPROVED

Head of Department Prof. L. Zharova



**TASK
FOR BACHELOR’S QUALIFICATION WORK**

Anastasiia Cherepashchuk

(Name, Surname)

1. Topic of the work: Circular economies opportunities and Challenges (on the basis of of Business Media Network LLC)

Supervisor of the work Liubov Zharova, Dr of Sci in Economics.

(surname, name, degree, academic rank)

Which approved by Order of University from “22” September 2022 № 22-09/2022-2c

2. Deadline for bachelor’s qualification work submission “23” April 2023

3. Data-out to the bachelor’s qualification work_

Materials from internship received during a Consultation with representatives of the company. Information from open resources in the Internet, official reporting of financial and economic activities of the enterprise.

4. Contents of the explanatory note (list of issues to be developed).






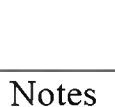
There are main topics a student should develop in this work:

- The evolution of the circular economy concept
- Development of circular economy as a means to solve the systemic crisis of the world economy.
- Study of LLC “Business Media Network” and its competitiveness on the market
- Consideration of ways of business development and enhancement in the framework of circular economy
- Establishment of ways and opportunities of improving business development in the framework of circular economy

5. List of graphic material (with exact indication of any mandatory drawings)

General information about the Company, visualization of methodological approaches, and statistical information on the company and its development, visualization of mechanism of development, etc.

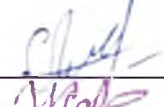

6. Consultants for parts of the work

Part of the project	Surname, name, position	Signature	
		Given	Accepted
1	Liubov Zharova, Dr. of Sci. in Economics		
2	Liubov Zharova, Dr. of Sci. in Economics		
3	Liubov Zharova, Dr. of Sci. in Economics		

7. Date of issue of the assignment

Time Schedule

No	The title of the parts of the bachelor's qualification work	Deadlines	Notes
1.	I Chapter	31.12.2022	In time
2.	II Chapter	20.02.2023	In time
3.	III Chapter	11.04.2023	In time
4.	Introduction, conclusions, summary	23.04.2023	In time
5.	Pre-defense	26.04.2023	In time

Student  _____ (signature)
 Supervisor  _____ (signature)

Conclusions:

The work was completed on time and in full. The structure corresponds to the task and allows for solving all formulated tasks. The text has a logical structure that gradually will enable you to develop specific recommendations from general theoretical generalizations. I would like to emphasize the high motivation and involvement of the student in carrying out the research. The processed volume of materials allows us to talk about the objectivity of the conclusions. The proposed recommendations are original and focused on a specific organization. The work deserves a high positive evaluation


Supervisor  _____ (signature)

TABLE OF CONTENT

INTRODUCTION	3
CHAPTER 1.	7
<i>1.1 The evolution of the circular economy concept.....</i>	<i>7</i>
<i>1.2 Development of circular economy as a means to solve the systemic crisis of the world economy.</i>	<i>18</i>
CHAPTER 2.	25
STUDY OF LLC "Business Media Network" AND ITS COMPETITIVENESS ON THE MARKET	25
<i>2.1 Analysis of the company's environment and organizational structure</i>	<i>25</i>
<i>2.2 Research of support and implementation of the concept of the circular economy by the company</i>	<i>39</i>
<i>2.3 Assessment of the competitiveness of the company</i>	<i>48</i>
CHAPTER 3.	51
CONSIDERATION OF WAYS OF BUSINESS DEVELOPMENT AND ENHANCEMENT IN THE FRAMEWORK OF CIRCULAR ECONOMY	51
<i>3.1 Tools and mechanisms for the implementation of the circular economy in the modern world.....</i>	<i>51</i>
<i>3.2 Circular economy for Ukraine: realities and opportunities</i>	<i>57</i>
<i>3.3 Establishment of ways and opportunities of improving business development in the framework of circular economy.....</i>	<i>66</i>
CONCLUSIONS AND PROPOSALS	71
LIST OF REFERENCES	74

INTRODUCTION

Relevance of the topic. The modern linear economic system has long operated on the principle of "produce - use - dispose of", relying on cheap and readily available raw materials to create conditions for economic growth. However, the ever-increasing demand for a limited supply of resources is calling into question the continued functioning of the traditional linear economic system. One of the most important concepts of the circular economy is the cycle of resource use. The traditional model of resource use involves only using resources and throwing them away after the first cycle of use, while the circular economy model offers and ensures the use of resources in several cycles. This allows for the reuse of materials and components after the first cycle, which in turn reduces waste and increases the efficiency of resource use. That is why the circular economy is one of the key approaches to solving the problems of sustainable development. The concept of circular economy is based on the idea of minimizing waste and maximizing the use of resources, which can reduce humanity's impact on the environment and simultaneously promote economic development. The circular economy contributes to the modernization of production and the introduction of innovative technologies by improving the environmental culture of society, protecting the environment, and reducing emissions of harmful substances.

The circular economy is a potential basis for implementing environmental innovations and increasing the level of environmental responsibility based on reasonable resource and energy consumption, reducing harmful environmental impact, and developing a socially integrated society.

Scientific elaboration of the research problem. There are a number of publications in the foreign and Ukrainian scientific space that highlight the theoretical provisions of the circular economy. In particular, by such scientists as: Boulding K. [17], Costanza R. [5], Mateos Rodrigues Aurora [5], W. Haas [7], W. Jiao, F. Boons [8], Q. Zhu, Y. Geng, J. Sarkis, K. Lai [9], Lacy, Mendiluce [10], C. Wen, Y. Zhao, R. Liang [11], Z. Yuan, J. Bi, Y. Moriguichi [12], J. Kirchherr [13], P. Ghisellini, C. Cialani, S. Ulgiati [14], J. Korhonen, C. Nuur [15], S. Sauve, S. Bernard, P. Sloan [16]. It is also worth noting that one of the most influential institutions for positive promotion

of the circular economy is The Ellen MacArthur Foundation [6]. It is pleasant to note that domestic authors pick up the theme of circular economy and study it: O. Shkurenko [27], Zvarych R., Zvarych I [59], Hurochkina V., Budzynska, M. [56], Dubel M. [48].

For most of the authors listed, a literature analysis of works related to the topic of the circular economy was performed. It was found that theoretical sources still do not have a single scientific consensus on the paradigm of the circular economy concept. The literature lacks a systematic multi-vector analysis of its conceptual foundations. Therefore, this issue requires further study in academic circles. This research paper aims to look at the circular economy from another angle, as well as to suggest ways to introduce the concepts into the realities of our lives.

First of all, this paper will provide a detailed literary analysis of the establishment and identification of the concept of "circular economy" with a look at the existing introduction of some concepts of this economic model in the modern world, on the example of the 8R program, as well as the UN report.

Secondly, this paper will investigate the Ukrainian startup Business Media Network LLC by conducting an internship and analyzing its environment, and all available and existing indicators, and will put forward proposals for improving its business operations using some of the aspects of the circular economy.

Finally, this paper will provide a partial overview of the situation caused by the Russian aggression in Ukraine, the problems, and possible solutions to this using some circular economy concepts.

In general, this paper will review the circular economy as a whole economic model from the perspective of the company, Ukraine, and the world; its advantages and disadvantages, and its impact on sustainable development; also review and analyze the competitiveness of the company and suggest ways to improve and enhance development using circular economy concepts.

The **aim** of the bachelor's qualification work is study of theoretical and applied aspects of the circular economy from the perspective of different levels of consideration.

In order to achieve this aim, the following **tasks** were set:

- to form an idea of the circular economy;
- identify the categorical content of the circular economy;
- to substantiate the specifics of this economic model;
- to study the evolutionary development of the concept;
- to outline the prospects for the development of the circular economy;
- to study the economic activity and the impact of the circular economy concepts on a specific Ukrainian company (Business Media Network LLC), as well as Ukraine;
- to conduct a study and propose improvements to the introduction of economic activities using aspects of the circular economy;
- to consider the current situation of the presence of circular aspects in Ukraine, as well as to project their possible use in the future.

The **research objects** are the concept of the circular economy and business development in its context.

The **research subjects** are a set of theoretical, methodological and practical approaches to identifying ways to improve business development and determine the competitiveness of the enterprise of Business Media Network LLC.

The main research methods are

- the method of analysis - when processing the information available in the scientific literature on the definition of the circular economy concept;
- methods of observation and survey - in the study of the economic activities of LLC Business Media Network, as well as the actual state of the company's innovation potential;
- the generalization - in the critical comprehension of scientific approaches to the peculiarities of introducing the economic activity of innovative online services in the context of the circular economy;

- the modeling - about creating models and simulations of the further development of LLC Business Media Network.

The information base for this practical report was based on the reports of Business Media Network LLC, the results of sociological surveys, journalistic research, and scientific publications by Ukrainian and foreign scholars.

The theoretical value of the obtained results the work is to disclose the theoretical and applied foundations of the circular economy, to present its genesis and evolution of the concept as an independent direction based on the basic provisions of the concept of sustainable development.

The practical value of the obtained results is to propose the development of new investment products that would support the circular economy, as well as the optimization of these investment decisions; to propose the development of a market for the reuse of resources, as well as various business models for the introduction of online business that follow the concepts of the circular economy.

CHAPTER 1.

THE IMPORTANCE OF THE CIRCULAR ECONOMY CONCEPT FOR ECONOMIC DEVELOPMENT IN TIMES OF DIGITAL TRANSFORMATION

1.1 The evolution of the circular economy concept

In the scientific literature there are different views and characterizations of the interpretation of the branch of the circular economy. Scientists identify it with concepts like "circular economy", "cyclical economy", "regenerative economy", "cyclic economy", "closed cycle economy", "green economy", "bioeconomy", etc. However, by analysing the theoretical sources in the following pages we conclude that there is still no scientific consensus on the circular economy paradigm. There is no systematic multidirectional analysis of the conceptual framework in the literature, although there are several attempts.

The circular economy is considered to be a new stage in the development of the concept of sustainable development and the green economy in particular because it allows economic growth to exist simultaneously with environmental regeneration and care for the environment. However, this branch is rarely considered as an independent direction in the economic theory of the 1970s [1]. Also, domestic experts note and emphasize that the circular economy is not an analogue of the "green economy", but acts as its integral part.

Moreover, the model of circular economy is based on various concepts of environmental economics, interrelated and complementary, combining economic development and environmental security. A detailed representation can be seen in the butterfly diagram (Fig. 1.1). The circular economy system diagram, known as the butterfly diagram, illustrates the continuous flow of materials in a circular economy. There are two main cycles – the technical cycle and the biological cycle. In the technical cycle, products and materials are kept in circulation through processes such as reuse, repair, remanufacture and recycling. In the biological cycle, the nutrients from biodegradable materials are returned to the Earth to regenerate nature [2].

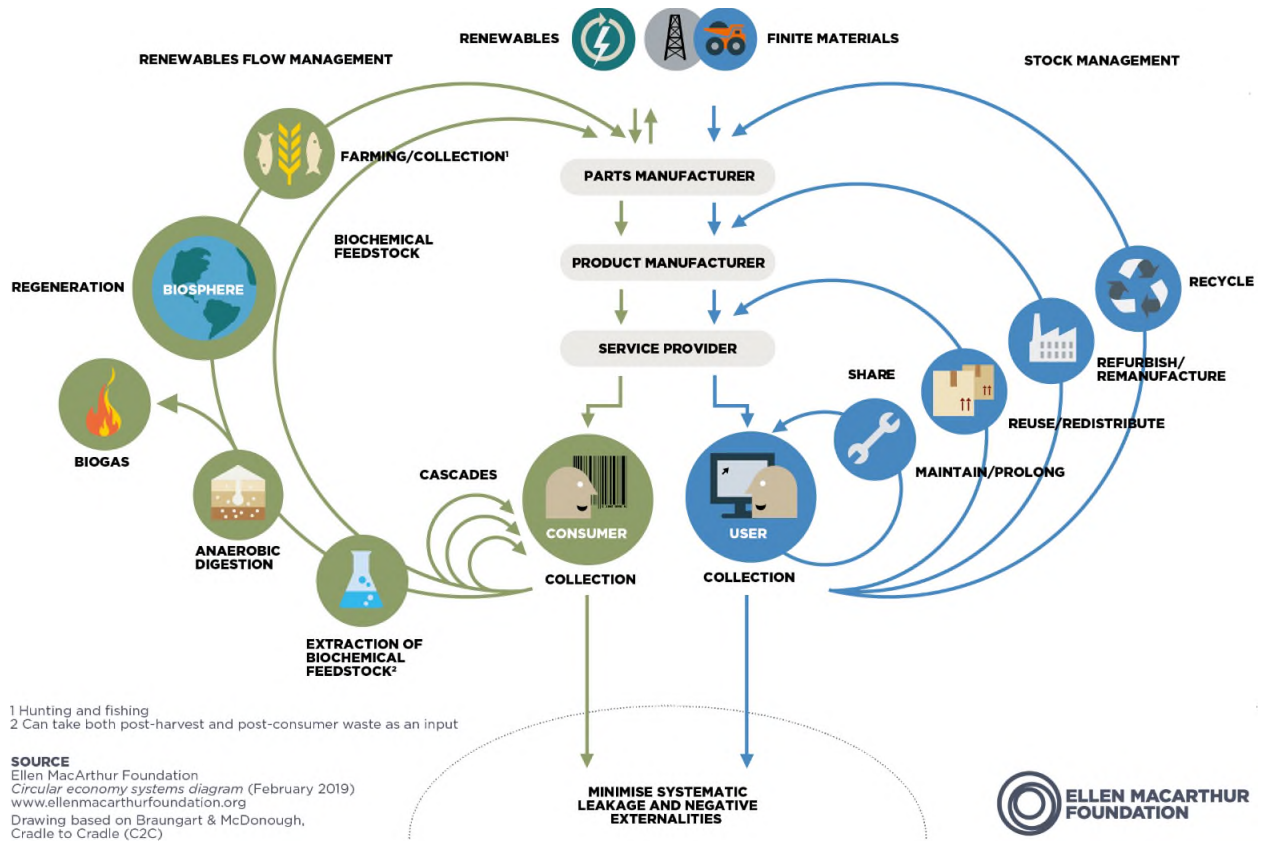


Fig. 1.1. The butterfly diagram. Source: <https://ellenmacarthurfoundation.org/circular-economy-diagram>

Also, the concept of circular economy differs significantly from the concept of sustainable development. The key difference between the circular economy as an independent direction is the deepening of the content and coverage of a wide range of issues (economic, environmental, social, lean, and restorative aspects of development). Let us consider the above theses in Table 1.1:

Table 1.1. Comparative analysis of the main concepts of the environmental economy [3].

Basic concepts of economics of environmentalism					
Components and elements	Sustainable development	Green economy	Blue economy	"From cradle to cradle"	Circular economy
1. The main subject	A person is the main subject of socio-economic processes	Human ecologist	Innovative and frugal person	Human is an integral part of society and nature	Human is the guarantee of preservation of environment and biodiversity
2. The essence of the concept	Meeting the development needs of the present generation does not negatively affect the ability of the future generation to meet their needs	Sustainable economic growth, improving human well-being and creating new employment opportunities, while ensuring the healthy functioning of the Earth's ecosystems	Waste of one product becomes a raw material that provides a new production and financial flow. Stimulates the transition from the economy of goods to the economy of systems that ensure sustainable development	The concept of waste-free production based on the principles of regenerative design	A model of economy based on closed cycles, with multiple use of resources, high degree of waste recycling in order to achieve climate neutrality
3. Main directions	Triad of social, economic and ecological systems	"Green growth" provided by innovative drivers of safe and balanced development	Formation of an integrated ecological and economic effect. It is based not only on the protection and restoration of nature, but also on the development of natural systems in general	An independent certification system that assesses the safety of products based on the materials and production technologies that were involved in the manufacturing process	Characterized by minimizing the consumption of primary raw materials and maximizing the use of recycled resources
4. Dominant principles	16 basic principles declared at the UN Conference in Rio de Janeiro, 1992 and in the materials of the special session of the UN General Assembly, New York, 1997.	Intergenerational equity; preventive approach to environmental impact; creation of "green" jobs, growth in key sectors of the economy	Cascade use of raw materials and energy in the process of systems operation	The consumer pays not for the product itself, but for its use. The issue of disposal is handled by the manufacturer of the goods	Ensures the phased implementation of the principles of resource efficiency and zero waste
5. The goal	Sustainable development of the planet at low material, energy and environmental costs				

The European Investment Bank outlined three main reasons for the transition to a circular economy [4]:

1. Resource constraints. Global demand for resources is growing very rapidly, resulting in an ever-increasing scarcity of critical resources and water.
2. Technological development. The implementation of new technologies allows the development and continuation of new business models for the circular economy. Without the formation of improved technologies and innovative approaches, the recycling, replacement, and reuse of resources and the application of new IT technologies will not be possible.
3. Socio-economic development. Circular models play an important role in the context of growing urbanization. Systems can be developed, implemented, and maintained in cities that will collect and transform various goods, materials, and other resources, which will be cost-effective and environmentally friendly.

There is another important reason, which scientists repeatedly emphasize, and which, directly, is no less important: ecological. The most striking example is unsanctioned industrial waste, which occupies vast areas, and its dispersal and erosion lead to environmental pollution, causing damage to public health, agriculture, soils, water resources, etc. Thus, negative externalities causing environmental hazards and environmental degradation must be taken into account. The goal of a circular economy is to internalize externalities, minimize damage and restore natural ecosystems to a safe level.

Above we have already considered a comparative analysis of the main concepts of the economics of environmentalism to better understand them. Now consider the comparison between traditional economics, ecological economics, and traditional ecology by Mateos Rodrigues Aurora based on Costanza R [5] in Table 1.2:

Table 1.2. Comparison of the traditional economy, ecological economy, and traditional ecology. Composed by Mateos Rodrigues Aurora, based on Costanza R.

	Traditional economy	Traditional ecology	Ecological economy

Worldview	Mechanical, static, atomistic	Evolutionary, atomistic	Dynamic, systemic, evolutionary
Basic concepts	Utility (only for human), scarcity, market	Evolution of varieties	Ethics, marginal utility (distribution), environmental sustainability.
Time interval	Up to 50 years	From a few days to the era (thousand years)	A few days - eras (thousands of years), multiscale synthesis
Spatial interval	From local to international	From local to regional	From local to global
Structure of varieties	People	All except the people	Whole ecosystems, including people
Main macro-objective	Growth of the national economy	Survival of species	Sustainability of the ecological and economic system
Main micro-objective	Maximum profit (company), maximum utility (individual)	Максимальний репродуктивний успіх	Adjusted taking into account the whole system
Understanding of the technical process	Optimistic	Pessimistic	Reasonably skeptical
Academic position	Disciplinary	Disciplinary	Interdisciplinary
System	Open system	Closed system	Closed system (ecological system), open system (economy of the surrounding area)
Significance	Minor problem	The main problem	The main problem

Technologies	Solve the problems of resource shortage	Do not solve the problem of resource shortage	Solve problems related to the lack of resources
Generation	The current generation	Future generations (species survival)	Present and future generations
Principles	Efficiency, rationality, maximization of utility and profit, economic growth	Preservation, independence, survival	Domestic and intergenerational capital

Continued tab 1.2

And, in particular, let's look at the visualization of the basic difference between the traditional linear economy and the circular economy in Fig. 1.2:

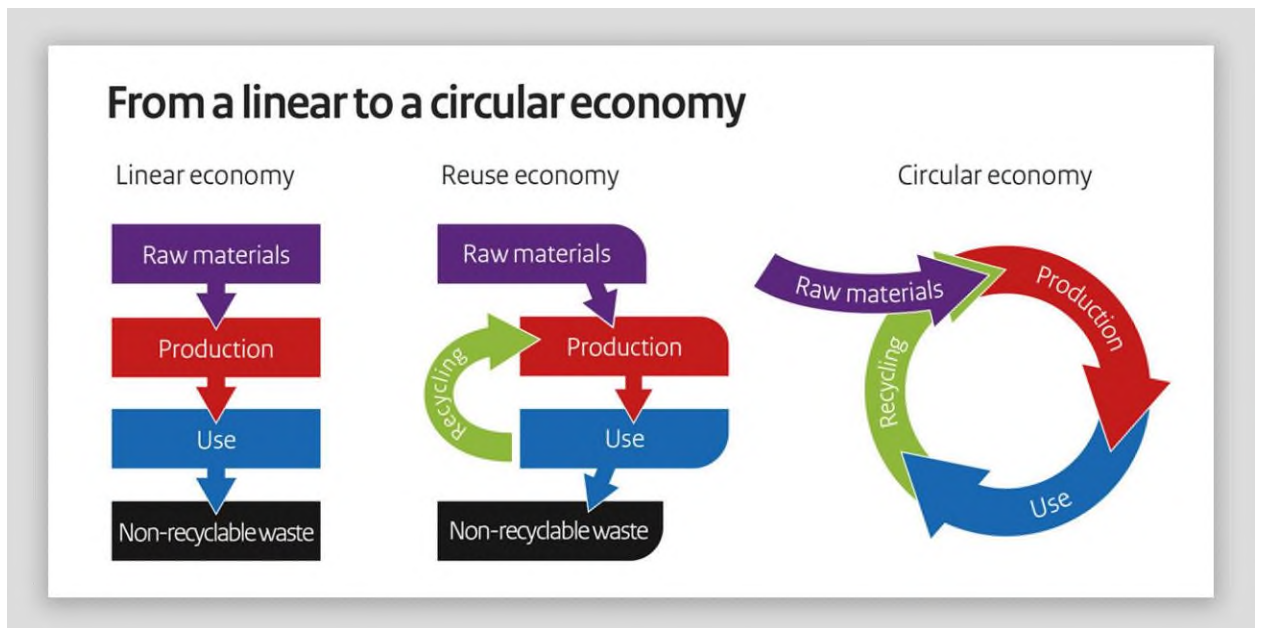


Fig 1.2. The difference between a linear to a circular economy

Source: <https://www.government.nl>

So, after a basic understanding of the concept, let us move on to a more in-depth literary and chronological analysis of the circular economy. Let us begin with the main interpretations of the notions of circular economy from representatives of different scientific schools and make a certain "vocabulary" in Table 1.3:

Table 1.3. Main interpretations of the concept of "circular economy".

The scientist	Definition
The Ellen MacArthur Foundation	A systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution. It is based on three principles, driven by design: eliminate waste and pollution, circulate products and materials (at their highest value), and regenerate nature [6].
W. Haas et al.	The circular economy (CE) is a simple, but convincing, strategy, which aims at reducing both inputs of virgin materials and the output of wastes by closing economic and ecological loops of resource flows [7].
W. Jiao, F. Boons	An economic system that replaces the 'end-of-life' concept with reducing, reusing, recycling, and recovering materials in production/distribution and consumption processes [8].
Q. Zhu, Y. Geng, J. Sarkis, K. Lai	A way of continuous economic development without creating significant environmental and resource problems [9].
Lacy et al.; Mendiluce et al.	A potential driver for sustainable economic growth with reduced environmental impact [10].
C. Wen, Y. Zhao, R. Liang	A way to address the challenges of sustainable resource development [11].
Z. Yuan, J. Bi, Y. Moriguichi	A policy strategy to reduce resource scarcity and pollution [12].
J. Kirchherr et al.	A circular economy describes an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling, and recovering materials in production/distribution and consumption processes, thus operating at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity, and social equity, to the benefit of current and future generations [13].
A. Tukker	The mutual philosophy that a "thriving" economy and a "healthy" environment can coexist [14].
P. Ghisellini, C. Cialani, S. Ulgiati	Space to address the growing resource challenges; A concept that decouples direct resource use from economic growth [14].
J. Korhonen, C. Nuur et al.	The Sustainable Development Initiative, which aims to reduce linear material and production flows in production and consumption systems through the use of

	material cycles, and renewable and cascading energy flows [15].
S. Sauve, S. Bernard, P. Sloan	The model of production and consumption of goods by means of closed cycles of material flows, which involves the preservation of external environmental factors associated with the extraction of primary resources and the formation of waste [16].

Continued tab.1.3

The analysis of scientific publications devoted to studies of the circular economy shows a deep understanding of existing problems by scientists and the gradual formation of theoretical and methodological approaches to their solution. Based on the generalization of views on the essence of this category, the following directions of interpretation of the circular economy can be distinguished: model, activity, system, strategy, process, instrument, and philosophy.

The use of the concept and the disclosure of the concept on a systematic basis began to appear in the literature in the 1960s. In 1966, Boulding K. published an article with the title, which seemed to speak about science fiction: "The economy of the future spacecraft - Earth". He used the term "spacecraft Earth", which was proposed by Henry George in 1879 to refer to the limited resources available on planet Earth [17]. He represented our planet as a ship in which everything is connected: "This is a well-prepared ship in which we sail through space", so the resources must be appropriately allocated in order for the crew to survive. In Boulding Kenneth's theory, well-being and progress are measured not by the rate of economic growth, but by the state of stocks of food, oxygen, water, the health of the crew, and other basic necessities, summarizing the grounds as follows: "I am tempted to call an open economy a 'cowboy economy', a cowboy symbolizes boundless plains as well as links to reckless, exploitative, romantic and violent behavior... The closed economy of the future can be called in a similar way - the economy of the "cosmonaut", where the Earth has turned into one spaceship with a limited supply of water... and where man must find his place in a cyclic ecological system capable of continuous material form reproduction... In the cowboy economy, consumption and production have no limits, and the success of an economy is measured in throughput in terms of factors of production" [18].

The astronaut's economy is built in contrast to the cowboy economy. The astronaut's prosperous economy will be based on the optimal indicators of nature, degree, quality, and complexity of all its "fixed capital", including the state of human bodies and minds in the system, rather than on indicators of production-consumption. Regarding this attitude, Boulding Kenneth's criticism of a general obsession with economic growth was summarized in one of his most famous notes: "Anyone who believes that economic growth can continue indefinitely in a limited world is either crazy or an economist." [19].

The next took up the baton was D. Meadows and his co-authors [20]. It was a scientific paper "The Limits to Growth", published in 1972. The main theses in the work were the development and manufacture of products using recycling.

In the 1980s, a group of scientists such as W. Stahel, G. RedayMulvey [21], M. Braungart, and W. McDonough [22], described the idea of a closed-loop economy.

Decades later, the famous environmental economist D. Pierce joined in and gave a clearer meaning to the concepts we know at the moment. He put forward the closely related concepts of cradle-to-cradle and industrial ecology [23].

Since 2010, the Ellen MacArthur Foundation has been a global opinion leader on the transition to a circular economy. Since its inception, the Foundation has worked to put the circular economy on the agenda of decision-makers in business, government, and academia. According to the Ellen MacArthur Foundation (2013), the circular economy aims to divide economic growth from the consumption of limited resources (thereby minimizing their negative impact) and changing them to waste disposal and resource reuse [24].

So, we have considered a small chronological overview of the primordials, bringing the concept of circular economy to its present stage of characterization. Now let us consider precisely the evolutionary development of circular economy according to D. Reike, W. Vermeulen, and S. Witjes [25]. The authors' study considers the evolutionary development according to three main stages:

- Stage I (1970-1990). Work with waste. Adoption of legislative measures in the environmental direction. At this time, one of the main components of the circular economy, the 3R concept, begins to arouse curiosity. 3R = Reduce, Use, and Recycle. In 1971 the principle of the 'polluter pays' was born. The essence of this principle of international environmental law is that the producer of goods has not only to pay for the prevention of damage but also to cover the damage caused to the environment. The purpose of this principle is the internalization of costs, aiming to incorporate the various environmental costs into the final cost of a product or service [26]. Waste management is also a central issue, but the way out is an approach in which the territory of fewer wealthy countries was used for waste disposal or recycling.

- Stage II (1990-2010). Environmental efficiency strategies. The establishment of a circular economy was definitely influenced by the idea of environmental payments, i.e., pollution charges, which were seen as a certain economic opportunity in environmental problems. Finally, at the beginning of the 21st century, a number of environmental problems were recognized as global problems. The development of zero-waste paths began, but this only applied to industry.

- Stage III (2010 to present). Maximum conservation in the face of resource depletion. The concept of the circular economy got its final form, incorporating all the most real ideas of theoretical research. The threat to mankind's survival due to the reduction and disappearance of necessary natural resources, overpopulation of the planet, the volume of waste, and climate change has been recognized. Legislated development for companies taking into account several principles: green innovation, the use, and transition to alternative sources, and a change of approach to the industrial process.

It is pleasant to note that domestic authors pick up the theme of circular economy and study it. Thus, the work of O. Shkurenko [27] identifies four stages of formation of the circular economy model:

- The concept of "green growth" (the 80s). It was formulated and envisaged the transition to ecological production and consumption for the optimal direction of development.

- The new strategy of sustainable development (the 90s). Presented an alternative to the classical economy through the 3R principle - Reduce, Reuse, Recycle.

- Transformation of green growth principles (the 2000s). The principles of green growth are defined as optimal and documented in the Millennium Development Goals (200-2015).

- Global green economy (2008 - still ongoing). The UN Environment Program (UNEP), the Green Economy Initiative, was launched. It aims to respond to the global economic downturn by focusing on economic growth and job creation.

In the last decade, the number of supporters of the concept of a circular economy has grown significantly, because they believe that circular growth will help to overcome the climate crisis at the same time as economic growth.

If we turn to the alma mater of modern science, experts at Oxford University have formulated a definition of the green economy based on the Platform for Accelerating the Circular Economy (PACE) [28]. Consequently, according to its definition, the circular economy is a regenerative type of economy, which aims to preserve the maximum value of products, their components and materials, whose growth is not stimulated and does not depend on the use of limited resources. This type of economy is seen as a new trajectory of society on the path to sustainability.

Scholars such as P. Lacy, J. Long, W. Spindler [10] point out that the circular economy is becoming a powerful tool for separating growth from the use of scarce and harmful resources, which allows to increase production and consumption with less impact on the environment and at the same time makes companies more conscious, innovative and competitive.

A summary of the scientific literature makes it clear that the scientific and practical interest in different aspects of the circular economy is confirmed by the dynamic growth of research in the international scientific segment. However, despite the large number of publications on the subject, the paradigm of the circular economy has not been definitively formed. The scientific literature still lacks a systematic and comprehensive analysis of the conceptual foundations of the circular economy, which leads to different interpretations of this concept.

1.2 Development of circular economy as a means to solve the systemic crisis of the world economy.

The latest challenges of the world system, which are the synthesis of globalization, the fourth industrial revolution and the transformation of the resource-raw model of development, mark the need for industrial modernization, a tool of which is the implementation of organizational and economic mechanisms aimed at increasing responsibility and maintaining the balance of economic interests, ecological system and environmental management.

The modern economic system "produce - use - utilize" has long been functioning at the expense of cheap and available raw materials to create conditions for growth and stability. However, by 2030 the number of middle-class consumers is expected to increase by 3 billion people. This growth in demand for a limited supply of resources calls into question the continued functioning of the traditional linear economic system. At this stage of development, this model continues to generate problems, accumulating old ones like a snowball, without providing any solution to the issues. That is why the concept of circular economy has recently attracted attention, which involves the re-profiling of business processes in order to maximize resource conservation, minimize waste through reuse, modernization, reconstruction, recycling and other elements of framing, the research problems of the essence and prospects of the circular economy are relevant.

The beginning of the decade of this century has been tense for the global environment, which is an indicator of the beginning of new changes and a sign that the world capitalist system in the model of neoliberalism is falling into a systemic crisis. The world economy is still feeling the effects of the 2008 crisis, and for many representatives the state of this crisis has become permanent. In the fall of 2019, there was a wave of mass protests around the world as a response to transit tariff increases, cuts in spending on public services, and other harsh economic measures that primarily battered lower-middle-income populations.

The next significant blow was the outbreak of the COVID-19 pandemic with its devastating effects on countries around the world. The actions and decisions that were taken as remedies against the pandemic brought the world economy almost to a lockdown. The world is still suffering from the effects of the virus, such as the massive protests across China against the severe restrictions that are happening right now as this section is being written. So, the long-term effects of COVID-19 in all areas cannot be foreseen precisely.

On top of all the existing crisis factors came an equally tangible one for the rest of the world - the Russian-Ukrainian war. It will accelerate inflation, which will remain high longer than previously predicted, due to high commodity prices and broad price pressures. The roots of current inflation are non-monetary, that is, prices are rising not because of "printing money in the U.S.," but because of several market factors: rising energy prices, logistical problems, rising food prices, shortages of semiconductors, covid effects (pent-up demand for services: tourism, etc.) and so forth.

That is, when oil and gas prices go up, producers have higher costs for transporting goods or trivial energy for production facilities. As a consequence, these additional costs force the producer to put them into the price of the product, which then ends up on store shelves or sold to another company in the industrial chain.

Russia is a large raw material base in energy (gas, oil, coal), metals (titanium, aluminum, copper, etc.), and grains. Because the West realized the need to stop the Russian regime, the aggressor state has restricted access to markets for raw materials (except grain), and this has greatly reduced supply. As a consequence, prices rise because other producers have no time to fill the supply gap. Rising prices for metals, grains, and energy make end products more expensive: cars, food, electronics, fuel, and the like.

So, the world economy is as bad as ever. The linear economy is now failing and incapable of solving the problems and consequences, some of which are listed above. So, the world can continue to wait for new challenges that it may not be able to cope with, or begin to transition to new models that may be the permanent future.

In September 2020, a joint effort of a number of non-profit organizations, such as the Center for Economic and Social Rights (New York), the Global Policy Forum (New York), Public Services International (Fernet-Voltaire), Third World Network (Penang), and the Friedrich Ebert Foundation (Berlin), conducted a study of the systemic crisis of the world economy. The result of the study was the definition of an 8-step program for systemic change, called "8R".

This is what this eight-step program is all about:

1. A reassessment of the importance of the "care economy" field. The pandemic has shown the aspect of the shortage of care professions, which for decades have been almost unrecognized, socially devalued, poorly paid with little protection. Transformation in this sphere must be social in nature: the same level of care for all citizens, the allocation of public resources to build the infrastructure of the care sphere, the strengthening of mechanisms of care for the community.

2. Revisit the issue of empowerment of the sphere of public services (health care, education, etc.). This sector is rather underfunded.

3. Revisit the issue of balance between global and local value chains. The pandemic has pointed to a weakness of the global economy, namely commodity dependence and dependence on global value chains. It reflects the dominant model of the global division of labor that does not take into account the various externalities and risks associated with resource exploitation, environmental degradation, human rights violations and labor rights. The current crisis allows us to reconsider unbalanced export-led development strategies, shift the center of gravity away from the world market, and direct public policy and investment toward a circular economy model. The main directions for economic transformation are to improve the permanence of the local food system (a common circular network integrating sustainable production, processing, distribution, consumption and waste management to improve the ecological, economic and social condition of a given territory); to expand regional and sub-regional collaboration to meet domestic demand; systemic reforms in international trade and investment regimes to expand the space of national I assume that the Russia-induced energy crisis will be one of the main drivers for advancing this point.

4. Strengthening the transition to climate justice. With each passing day, the effects of climate change are greatly increasing and becoming tangible for all, but especially in developing countries. This is one of the consequences of a widening gap in global inequality. One solution proposed is to reduce fossil fuel production, as well as subsidies and investments, and move to a percentage of energy generation from renewable sources by 2030.

5. Redistribution of economic and resources. Redistribution is critical to a just recovery after COVID 2019, the realization of human rights and the achievement of the Sustainable Development Goals. Critical areas of "redistribution" policy are labor and wage issues, financial and corporate regulation.

6. A look at the issue of global money regulation. One of the important elements of a mechanism for developing public debt. This requires the creation of institutions that make independent and binding decisions on public debt restructuring on the basis of objective criteria and are able to ensure its impartial implementation.

7. Rethink multilateral solidarity. Support for international cooperation by global organizations such as the UN should carry the standard at the global level, rather than being a neutral organizer of public and private participation. Given the absurdity of UN decisions as an organization that is supposed to maintain world peace against the backdrop of Russia's armed aggression against Ukraine, it suggests not just rethinking such "solidarity" but a complete reorganization.

8. Redefining measures of development and progress. The Global Health Index, an analytical tool designed to identify shortcomings and undercounts in epidemic and pandemic preparedness, shows that largely ignoring social and environmental determinants and focusing instead on advanced technology and a liberalized regulatory framework can lead to misinterpretations and policy choices. The principle of enrichment dominates the principle of sustainable development in the development of countries. This generates imitation of the world economy and a style of thinking that must be overcome. According to scholars, it is the implementation of the Sustainable Development Goals

and the implementation of the circular economy model that are the main reference points at this time [29].

The crisis of 2020, and its deterioration in 2022 with the Russian-Ukrainian war, make it clear that government policies that aim to increase economic productivity are not only insufficient - they fail. Issues of climate change are beginning to emerge much higher than issues of productivity and economic growth, for it directly concerns the survival of the human species as such. So, it is the circular economy that is an excellent choice that focuses on improving health care, food security, renewable energy, etc. The circular economy can be a transformational public policy that can create an enabling environment for business, innovation, and global leadership in finding new solutions.

It is worth noting how this 8-step framework overlaps with one of the basic principles of the circular economy, the “3R”. The circular economy framework is now extended to “10R”, which inherits the basic concept [30]:

- "refuse" - refuse excessive use of raw materials;
- "rethink" - reviewing uses and products;
- "reduce" - using fewer natural resources and materials;
- "reuse" - reuse products already in use;
- "repair" - repair and maintenance of a defective product with its subsequent use for its primary purpose;
- "refurbish" - the modernization of an old product;
- "remanufacture" - changing the parameters of a product, using parts of an obsolete product in a new one;
- "repurpose" - re-purposing a used product in other areas;
- "recycle" - recycling;
- "recover" - production of energy from product materials.

"10R" is not the final form and structure of the circular economy, as it is in permanent improvement. It can also be used depending on the context, such as in the case of the "8R" program. After all, economics is not only about production and resources but also about social and political issues, where the circular model can provide direction and serve as solutions.

The circular economy has also been identified as one of six trends that will help overcome the effects of the coronary crisis and support the development of new business ideas, goods, or services in the UN report (2020) [29].

Consider these six transformational trends:

1. The Exabyte Economy. Consists of extending 5G technology to flow data faster and support remote online solutions arising from the crisis, as well as for personalized healthcare, finance, etc.

2. The Wellbeing Economy. Relates more to health care and scientific psychology and psychotherapy in particular; consists of rethinking one's approach to one's physical and mental health.

3. The NetZero Economy. Accelerating the world in reducing CO2 emissions using different tools: investment, technology, and innovation.

4. The BioGrowth Economy. Designing and creating biomaterials that can decompose naturally without harming the environment. This should solve the problem of agricultural waste, and create new agricultural crops with greater sustainability and adaptation to new climatic conditions.

5. The Experience Economy. Consists of buying an emotion rather than a commodity using technological innovations (Example: The Meta world from Facebook).

6. The Circular economy. This is presented in the report as a way to reduce waste and optimize the use of resources for new opportunities throughout the value chain. This way responds to a growing global population, increasing resource waste, and increasing public awareness of the needs of future generations.

Some principles and methods of the circular economy model have long been successfully implemented and adapted to the modern world. Recycling, upcycling, waste reduction, resource recycling and clean energy, food waste reduction, etc.

A UN survey of 4,735 CEOs from 74 countries shows that the circular economy scored 3.94 out of 5 and is the second most effective implementation after the exabyte economy.

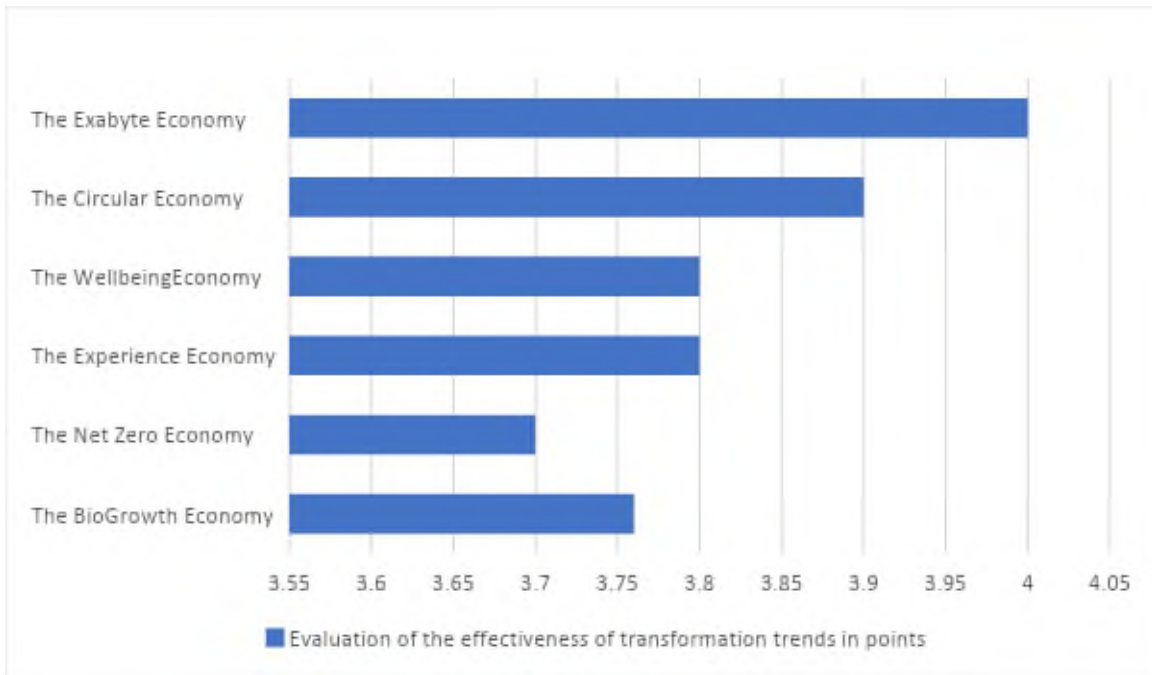


Chart 1.1 Evaluation of the effectiveness of transformation trends in points [29]

Having analyzed a huge number of concepts in the past division, we can conclude that only one of the economies is the most independent model and can include all the other 5 - it is the Circular Economy.

The consequences and prospects of practical implementation of the concept of circular economy differ depending on the level of the economic system. In particular, the implementation of the principles of circular economy at the micro-level implies taking into account environmental aspects in the design of production processes and products (ecodesign), the organization of clean production with low emissions, the introduction of waste prevention systems, as well as increasing consumer responsibility through the use of eco-labeling systems and green public procurement.

The implementation of circular economy practices at the meso-level includes the development of eco-field parks (or eco-industrial parks) and agrarian ecological systems (agro-ecosystems), complemented by eco-friendly design and efficient income management.

The use of the circular economy system at the macro level aims to create eco-communities, eco-societies, and eco-regions.

CHAPTER 2.

STUDY OF LLC "Business Media Network" AND ITS COMPETITIVENESS ON THE MARKET

As mentioned in the section above, the current economic system relies on cheap and readily available raw materials to create conditions for growth and stability. However, the ever-increasing number of consumers leads to a growing demand for a limited supply of resources and calls into question the continued functioning of the traditional linear economic system. Thus, it emphasizes the need to move to other, more flexible schemes and concepts, which are to adapt production to the current lack of resources and achieve sustainable growth under such conditions, focusing on positive benefits for society and nature. This tends to gradually decouple economic activity from the consumption of limited resources, which is solved by reducing waste to zero-waste production technology. The transition to renewable energy sources supports the circular model and encompasses economic, natural, and social capital.

So, in this section, we will try to analyze how such a theory can be applied to practice in the context of the working environment of Business Media Network LLC, where I did my internship.

2.1 Analysis of the company's environment and organizational structure

General familiarization with BMN enterprise. My internship took place at Business Media Network LLC. The company was founded in January 2022 by the Association of Students of Ukraine, Henry Sterenberg, and Alex Sheyner.

The mailing address of the Limited Liability Company is:

BUSINESS MEDIA NETWORK USA

5301 N FEDERAL HWY STE 204

BOCA RATON, FL 33487

Employer Identification Number: 88-0945781

It is an online platform company that carries out commercial activities, including online services for B2B solutions [31]. The central concept and goal of the company are to create a platform network for quick and easy access to working capital for small and medium-sized businesses in Ukraine.

Business Media Network consists of four interconnected platforms that are represented on the Fig 2.1.

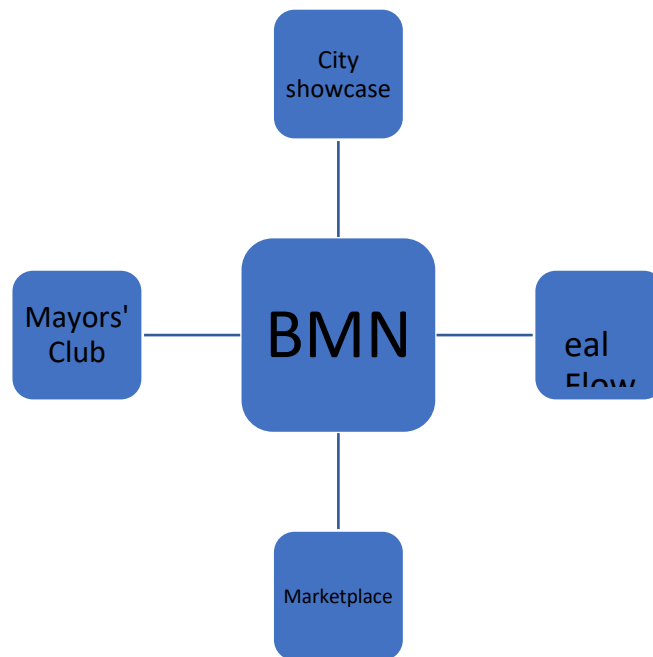


Figure 2.1. Structure of Business Media Network LLC

1) **Deal Flow** is a platform for International Digital Weekly Publications. It is the face of the project as seen by national and international partners. That is, it is a product that represents Ukrainian business in the international arena. The platform will publish issues such as CEO of the Week, Company of the Week, Project of the Week, and Start-up of the Week every week. Based on specific criteria, the team responsible for this will select the best candidate for each category weekly. The company will contact and interview them to learn more about their career path and other aspects of their work. Thus, visitors to the platform will be able to better familiarize themselves with and understand the activities of CEOs of companies, projects, and start-ups and discover the behind-the-scenes of the Ukrainian business environment [32].

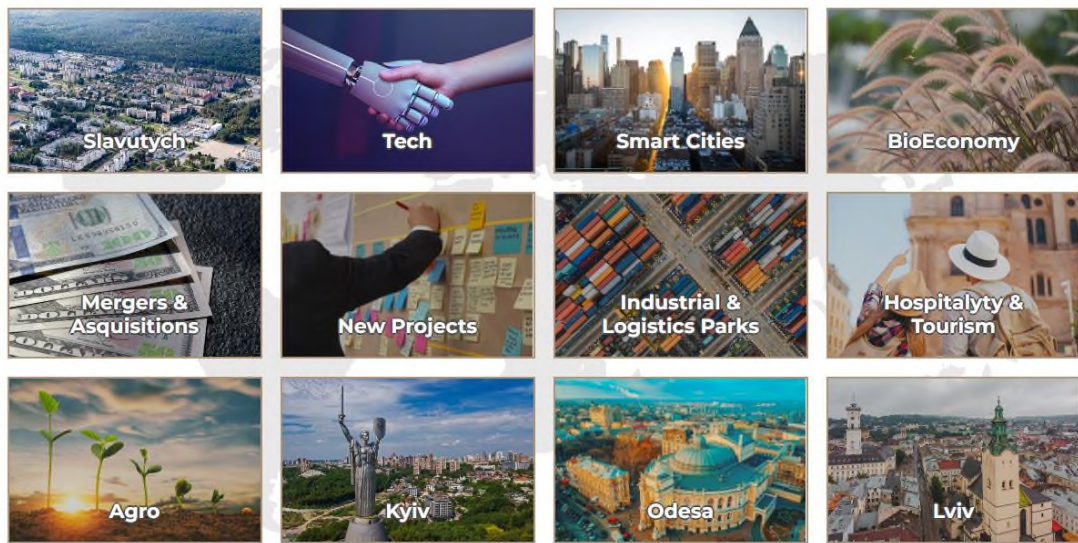
Below in Fig. 2.2, we can see a few of the sections from the platform's website in Fig. One of them is Smart Cities and BioEconomy [32].

Smart cities are a section that will tell you how to improve the quality of life of residents, make the city more sustainable, reduce environmental impact and adapt to climate change. In other words, these are mainly nature-based solutions, as well as technologies and smart infrastructure.

For example, the section may consider a herb garden project in Vinnytsia or rain flowerbeds in Lviv.

Urban meadows (herb meadows) are a type of landscaping where annual and perennial flowers and grasses grow. A test plot has already been created in one of Vinnytsia's districts to clean the air, reduce noise and temperature, improve the aesthetics of the place, and restore biodiversity [33]. In Lviv, there are already several rain flower beds in place. The idea is to create a perennial flower arrangement, with plants that collect and retain rainfall from neighboring sidewalks thanks to a drainage system. This allows you to remove excess moisture from the compacted surfaces and direct it to feed the vegetation within the flower garden. Species that are resistant to excessive moisture and hardy in conditions of prolonged drought are selected for planting. Plants are responsible for filtering rainwater, as well as for purifying and humidifying the air, which is especially important near a road with heavy traffic. In addition, the composition will perform an aesthetic and educational function [34]. These are just a few examples of how this platform can be used to attract the attention of citizens and educate them about nature-based solutions.

EoT Deal Flow



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info@marketplace.eotua.com



Figure 2.2. EoT Deal Flow categories [32].

2) **Marketplace.** A catalog of companies and projects that operate as legal entities or individuals and offer goods or services.

The search features include the ability to filter companies and projects by a specific category, status, type, or industry. Currently, there are more than 30 industry types. Among them, we can distinguish Sustainable Solutions related to the topic of this work, as shown in Figure 2.3. As you can see, each project and each company has its location, which makes it easier to identify the most environmentally friendly regions.

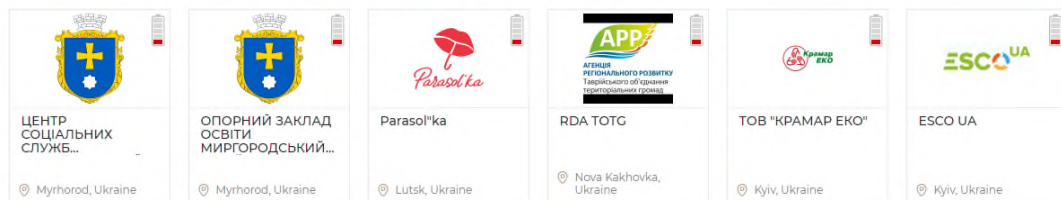


Fig. 2.3. Objects in the Sustainable Solutions category on the Marketplace platform [35].

In addition, a battery-shaped indicator is displayed at the top right, showing the rating of the object, which depends on the following factors: popularity among people,

community support, fulfillment of promises, and the activity of the project itself. The important part is that each of these factors is set by the community, which makes it impossible to falsify them.

From this platform, you can find all publicly available information about a particular company/project as shown in Figure 2.4:

- Location of the legal entity/individual
- Information about the foundation
- Registration number
- Number of employees
- Type of economic activity
- Company contacts
- Legal and financial documents
- Social activities of the company
- Products and services offered by the company
- Feedback from the company's clients

ESCO UA

We focus on energy efficiency and green energy, primarily within Ukrainian market, as of now. Being an investment and engineering company integrator we use Performance contracting scheme (ESCO business model) to provide our clients best energy solutions to reach maximum efficiency in their energy consumption. Our clients are state and private companies. With portfolio of 100+ acting ESCO contracts valued at EUR 10 mln+ we are among market leaders in Ukraine


Founded	2017
Industry	Investment, Sustainable solutions
CEO	Andrii Chubatenko
Registration number	41543652
Number of employees	
Head office	Kyiv, Ukraine
We provide	comprehensive set of energy efficiency measures
We are looking for	funding for projects scale up
Website	http://escoua.com.ua
Cooperation countries	

Fig. 2.4. Company information on the Marketplace platform [35].

The marketplace platform allows any business in Ukraine and the world to showcase itself, its services, and its products to anyone. The marketplace is based on complete transparency on the part of all parties and participants [35].

3) **Mayors' Club.** This is a non-governmental organization that has the potential for national significance. In its structure, it is an association of current and former mayors of Ukraine and representatives of united territorial communities. Since its inception, the Club's general idea has been to enable active and influential leaders of their cities to find the necessary resources, tools, and partners to develop their communities in any area. The main goal of the Mayors' Club is to collect and prepare projects of communities and their private businesses, which are essentially budget-forming, for further financing and investment. At the time of writing, the Club has 390+ members [36].

The screenshot shows the website interface for the Mayors' Club. At the top, there is a navigation bar with the logo and menu items: Проекти, Новини, Партнери, Події, Члени, UA | EN, and user icons. The main heading is 'Члени Клубу Мерів' with a large number '391' indicating the total number of members. Below the heading is a search bar with a dropdown for 'Місто' and a search icon. The main content area displays a grid of member profiles. Each profile includes a portrait photo, the member's name, their title and role, and their location. The first five members shown are:

Member Name	Title / Role	Location	Status
Удовиченко Володимир Петрович	Славутицький міський голова (1990-2015рр), Президент ГО "Клуб мерів", представник України в Конгресі місцевих та регіональних влад Ради Європи (1994-2015рр), Голова...	Славутич	Закінчив роботу
Мінаєва Галина Миколаївна	Чугуївський міський голова, член Правління Асоціації міст України та Асоціації відкритих міст України, Віце-президент Правління Харківського регіонального відділення Асоціації міст...	Чугуїв	Діючий мер
Фомічев Юрій Кирилович	Міський голова Славутича Вишгородського району Київської області з 2015 року, до чого був Генеральним директором ПП «Будівельна компанія «Славутич», Секретарем...	Славутич	Діючий мер
Турлітько Віталій Петрович	Голова Терешківської громади, учасник АТО, голова Громадської спілки «Координаційна Рада громадських організацій учасників АТО»	Терешки	Діючий мер
Мазурчак Олександр Володимирович	Кам'янець-Подільський міський голова (1997-2007рр), заступник, перший заступник Міністра з питань житлово-комунального господарства України (2008-2010рр), перший заступник голови КМДА (2010-2013рр), голова...	Кам'янець-Подільський	Закінчив роботу

Figure 2.5. List of Mayors Club members on the website [36].

Mayors, like projects and companies, have a location, which also makes it easy to find the right person. Some of the mayors have an image of a document at the bottom

right, which means that this mayor has entered detailed information about himself and the user has the opportunity to view it.

For example, in Figure 2.6, you can see the mayor's page, where he shares his projects and vision for the city's development. One of the most active mayors of the organization is the mayor of Slavutych, who strives to make his city more environmentally friendly. It was under his leadership that the Soniachne Misto Cooperative was created. The Soniachne Misto is building a solar power plant on the municipal roofs of Slavutych to earn money by selling electricity at a green tariff. Anyone can become a co-owner of this power plant [37].

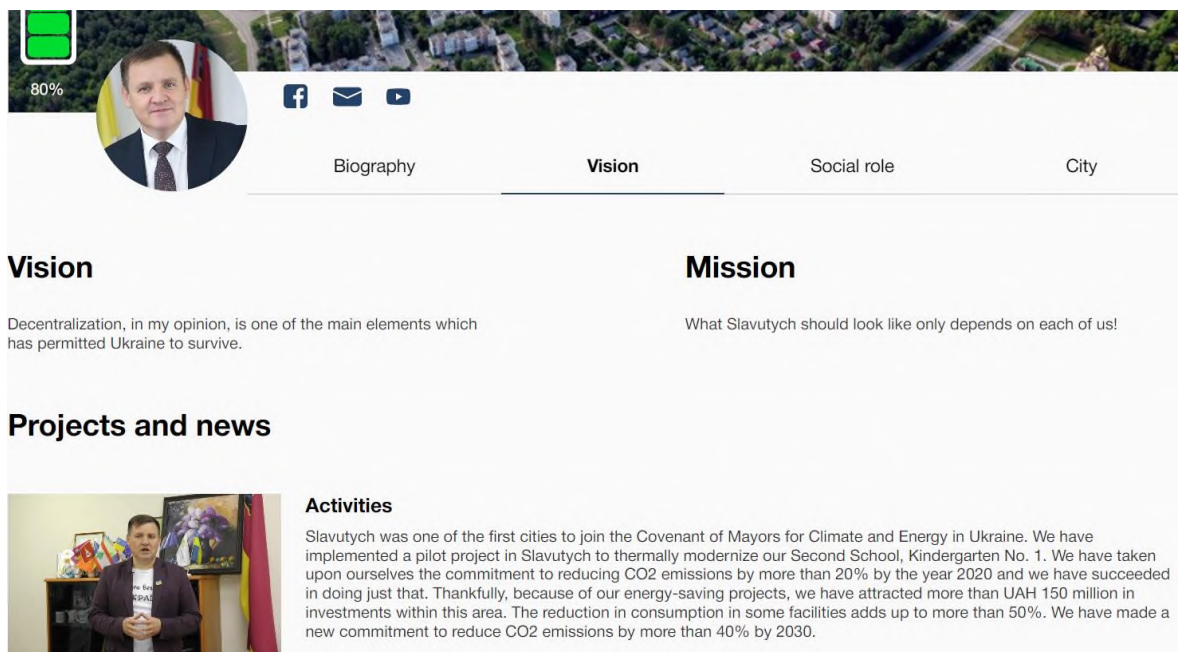


Figure 2.6. Personal page of the Mayor of Slavutych on the Club of Mayors platform.

4) **City showcase** is a digital network of websites of all Ukrainian cities and communities, including all infrastructure and small and medium-sized businesses. Each site has all the information you need to implement new ideas and projects to improve and develop the Ukrainian city/village/territorial community.

The goal is to cover all settlements of Ukraine with a population of more than 500 people, creating a network of about 3000 municipal websites [38].

In the context of the circular economy, City Showcase sites can serve as a directory of businesses or institutions that follow the concepts of sustainable

development. As an example, Figure 2.7 shows the facility of the State Research Institution "The Chernobyl Center", which provides scientific and technical services in the field of ensuring the safety of nuclear energy facilities at all stages of their life cycle, as well as research on reducing nuclear impact.

The screenshot displays the website for Slavutych on the CityShowcase platform. At the top, there is a header with the city's name 'SLAVUTYCH', its population '24 464', and a language selector set to 'Eng'. Below the header is a navigation menu with links such as 'About Slavutych', 'On the map', 'Local authorities and government', 'Business directory', 'Investment projects', 'Real estate', 'Useful and interesting', and 'City contacts'. The main content area is titled 'SCIENTIFIC INSTITUTIONS' and features a card for the 'State Research Institution "The Chernobyl Center"'. The card includes a photo of a cooling tower, contact information (phone numbers +380457923016 and +380457928144, email center@chornobyl.net, and address vulytsia Zbroinykh Syl Ukrainy, 11, Slavutych, Kyivska oblast, 07100), and a list of educational institutions on the left side of the page.

Figure 2.7. The category on the website of Slavutych on the CityShowcase platform [38].

The **organizational structure** of the company is closest to a matrix structure (Fig. 2.8). It is a combined and complex system. It implies the subordination of employees to several managers of the same level at the same time. As in the case of the functional structure, in addition to the general director, there are also directors in certain areas. In their subordination, some workers are involved in various projects.

The advantage of this structure is the division of responsibility between the heads of departments. It is also worth noting the presence of an operational manager of the company's platforms. Manager is responsible for communicating with the employees and establishing a working atmosphere.

Management of projects and tasks rests on the shoulders of the department director, and the project director only gives advices and recommendations and allocates resources [39].

For a company with four platforms, this model is the most successful. This type of organization provides a direct link between all management levels, ensuring a clear, uninterrupted workflow.



Figure 2.8. Matrix organization structure [40].

Commercial activity. Any activity, including commercial, has a certain orientation and is organized to achieve goals, which can be called the purpose of the operation. As an attribute of the market, commerce is formed on its principles, which are a prerequisite for its development. The market acts as a system of economic relations between sellers and buyers, the basis of which is the purchase and sale of products and services, which in its essence is a commercial activity. Its goal is to increase the income of production, trade, and intermediary structures, subject to customer demand satisfaction.

The analysis of the company's commercial activities in this report will be carried out through a description of the areas of financial and economic activities. Financial-economic activity is a set of activities for producing and selling goods, services, and products within a limited number of finances and resources of the company. In its essence, it involves the process of creating goods, services, and products [41].

The areas of financial and economic activities of Business Media Network can be considered as:

- Creation of equity through the issuance of shares and other instruments;
- Use of equipment and fixed assets in the process of operation;
- Creation of an investment portfolio of the company;
- Optimization of expenses of the firm, bringing them in correspondence with the level of income;
- Formation of opportunities to generate income;
- Formation of the range of goods and services;
- Selection of venues for sales and distribution;
- Development of communications policy and other marketing tools of the company;

The sustained operation of an organization in the marketplace does not exist without the application of modern financial management and planning techniques. Planning makes the organization stable in unpredictable market conditions, making this aspect especially relevant and essential in the current situation in our country, namely the war. Developing and implementing a plan of financial and economic activities take a decisive place in the set of measures to create financial stabilization.

Since the company is still in a state of a start-up, it is just beginning to attract investment and create its capital and financial assets. Therefore, the financial and economic activities plan, which will reflect the capital and current estimates, and forecasts of financial indicators are still in development.

SWOT analytics of the enterprise. Strategic planning is a special type of practical activity aimed at developing strategic decisions that put forward specific goals and strategies for the behavior of the corresponding objects. Implementation of the latter should ensure their effective long-term functioning and rapid adaptation to the changing conditions of the external environment.

Definition of strategic goals and objectives of LLC "Business Media Network" including the medium-term perspective, as a company that will be of strategic

importance to the state economy, will allow it to adapt to the effects and fluctuations in the economic market not only Ukraine but also in the international arena.

SWOT analysis is used for the analysis of the external and internal environment of the company. SWOT-analysis methodology implies firstly identifying the strengths and weaknesses of the inner environment, as well as opportunities and threats of the company's outer environment, and then establishing the connection between them, which later can be used to formulate the company's strategy.

Four varieties of strategy can be formed based on the results of the SWOT analysis:

- A strategy that uses the strong aspects of the firm to realize opportunities;
- A strategy that uses the strong aspects of the firm to address threats;
- A strategy that seeks to minimize the weak aspects of the firm through opportunities;
- A strategy that seeks to minimize the weak aspects of the firm and eliminate threats [42].

Underneath, Fig. 2.9, the matrix of SWOT analysis is represented.

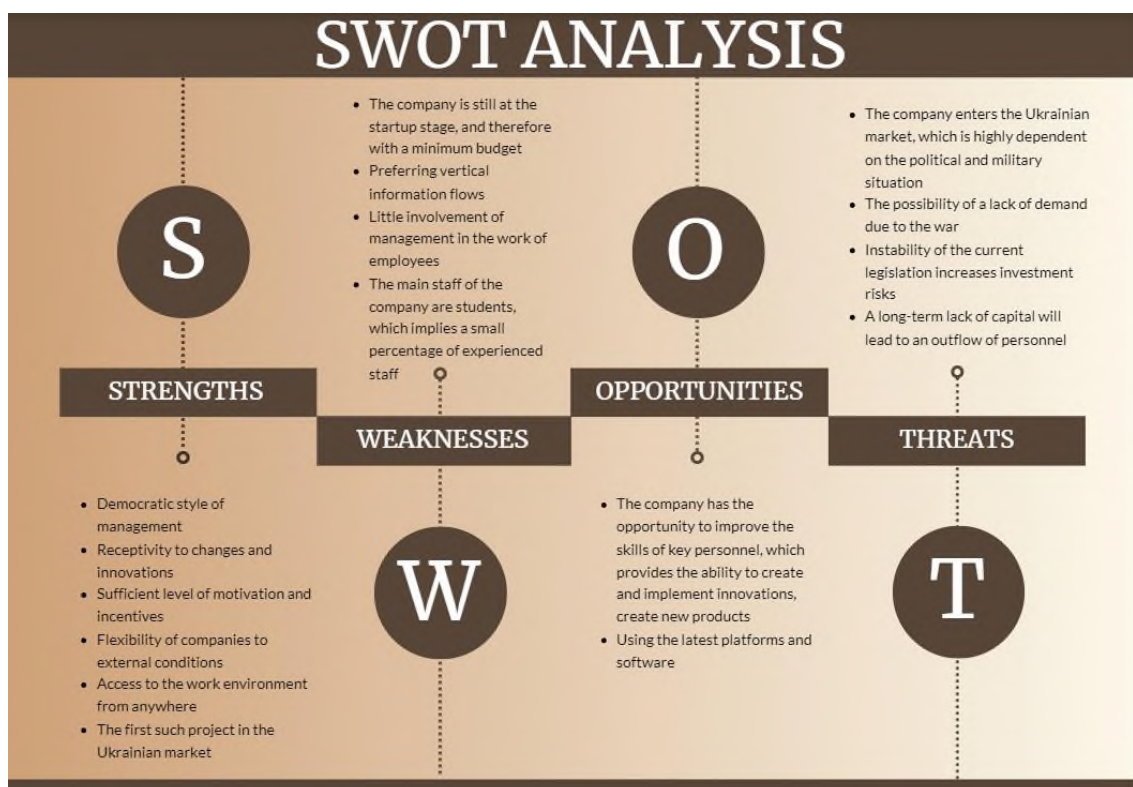


Figure 2.9. SWOT analysis of BMN. Created by the author.

The analysis of external factors and identification of the strengths and weaknesses of the company are the core elements of the strategic management process.

Such analysis forms the informational basis for determining the strategic goals of activities and developing the company's basic (corporate) strategy for the planning period, which is then concretized in the strategies of individual types of business and functional systems.

Further strategic directions of Business Media Network LLC activities should be planned to consider the company's strengths and weaknesses, opportunities, and threats. Business Media Network LLC should concentrate on launching its products as soon as possible to move from the start-up stage to a full-fledged market player. At the same time, it is necessary to reconsider the weaknesses of the company's activity: optimization of the company's management structure, thanks to which the management can be involved in the work of departments and better understand the process, as well as be closer to the person; to reconsider all possible attracting investments and capital to develop the company and motivate the personnel; to improve the marketing and sales department for successful market entry; to develop critical measures of the company's work in a state of war environment and counteraction to risks; to increase the number of employees, and to increase the number of employees.

Innovative activities of the enterprise. The innovation activity of the enterprise is aimed at creating and attracting those innovations from the external environment that would contribute to improving its competitiveness, strengthening market positions, and ensuring the prospects for development.

Innovative development of the enterprise - is the activity of the enterprise, based on a constant search for new methods and means of meeting consumer needs and increasing the efficiency of economic management; development, providing for the expansion of the boundaries of innovative activities and implementation of innovation in all areas of the enterprise [43].

One of the main conditions for ensuring the innovative development of the enterprise is the presence of innovation potential. This concept is understood as a set

of enterprise characteristics that determine its ability to carry out activity on the creation and practical use of innovations.

There are 4 types of innovation potential of enterprises [44]:

- with high innovation capabilities
- average innovative capabilities
- low innovative capabilities
- zero innovative capabilities

Each type of innovative potential differs in the provision of its own resources, i.e., sources to cover the costs of innovation implementation.

Provided a favorable innovation potential and innovation climate in the state, enterprises begin to implement their innovation strategies, the result of which is the emergence of innovation. Innovation can be classified according to several criteria. For example, according to the type of activity distinguished:

- technological,
- production,
- economic,
- trade,
- managerial
- social innovations

In the current conditions prevailing in Ukraine, the share of innovatively interested enterprises is constantly growing. Still, the percentage of technological innovations is decreasing due to the increased demand for innovations aimed at new ways to effectively organize the work process and the development of new relationships between enterprises. At the same time, the need for marketing innovations, which affect the design and presentation of enterprises' goods, which in turn leads to increased sales, is increasing. It should be noted that the increase in innovation-active enterprises is also influenced by the rapid development of scientific and technological progress and information technology, which are integral components of the successful implementation of innovation [14].

According to the above-described aspects of innovation activity, we can characterize the inherent in BMN. In my opinion, the company has medium innovation potential, as it uses the latest technical means to introduce its own business, follows trends, and quickly adopts what fits its working environment. To move to high innovation potential, you must refine your innovations, which requires a significant estimate, appropriate personnel, and time. This is a future goal for a company in the start-up phase, but it is not yet a pressing need. However, the company's products in the Ukrainian market have a chance to be innovative and bring something new to the Ukrainian business environment, but we will be able to see and analyze the realized result only after the launch of the products.

By type of activity, the innovations of BMN can be considered technical, economic, and managerial. The factors influencing the development of these particular innovations by type of activity are external, namely, the war in Ukraine. This factor makes it necessary to build a business system resistant to critical challenges and threats at once. Technical innovations can be called the choice and configuration of technical platforms because all the activities of the company are carried out in the online space. A trivial example is the use and customization of various CRM systems, software, and applications. This automation and virtualization of the work and service delivery process allow the company to be flexible and work in any environment. This spread of technological innovation reduces demand for competitive services provided by offline entities or individuals because BMN can meet and solve its clients' problems quickly and conveniently, saving consumers time. The online service significantly reduces the cost of services because it does not require additional costs, and increases accessibility, coverage, and responsiveness.

According to the economic type of innovation activity of BMN, then the very essence of the company as it is a new way to attract investment in Ukrainian business. Now there is no such platform, and the company is the first to produce such a thing.

As for managerial innovations, I would describe them as mixed, because they are closely related to technical ones. To skillfully manage a fully online company with

50 employees, management uses the latest technical applications and all kinds of technical capabilities to build and maintain the management of the entire team.

In my opinion, innovation at BMN is not only an accompanying link in the functioning of the company but also critical to its survival and success. It is an indispensable component for the success of any start-up and one of the main ones for BMN. That is why the company takes responsibility for introducing and supporting innovation in its environment.

2.2 Research of support and implementation of the concept of the circular economy by the company

Consider the ability of BMN as a company to use the strategies and tools that are implemented in the circular economy.

According to the experts of the Ellen MacArthur Foundation, the benefits of the "circular economy" for companies can be identified as follows: significant material savings, sustainable resource use, stimulation of innovation, the ability to meet the needs of a growing global population, and economic growth and income growth. According to the foundation's estimates, the circular economy could annually provide a trillion dollars of income growth to the global economy by 2025. In addition, the transition to a circular economy will create huge opportunities for modernizing production and implementing industrial innovations, providing an annual GDP growth rate of 7% [45].

For example, a McKinsey study [46] showed that the 28 industries surveyed could potentially apply most of the six activities of the circular economy to improve their productivity and reduce costs. This is illustrated in Figure 2.10.

These activities are:

Regenerate - transition to renewable energy and materials;

Share - sharing products or extending the life of a product;

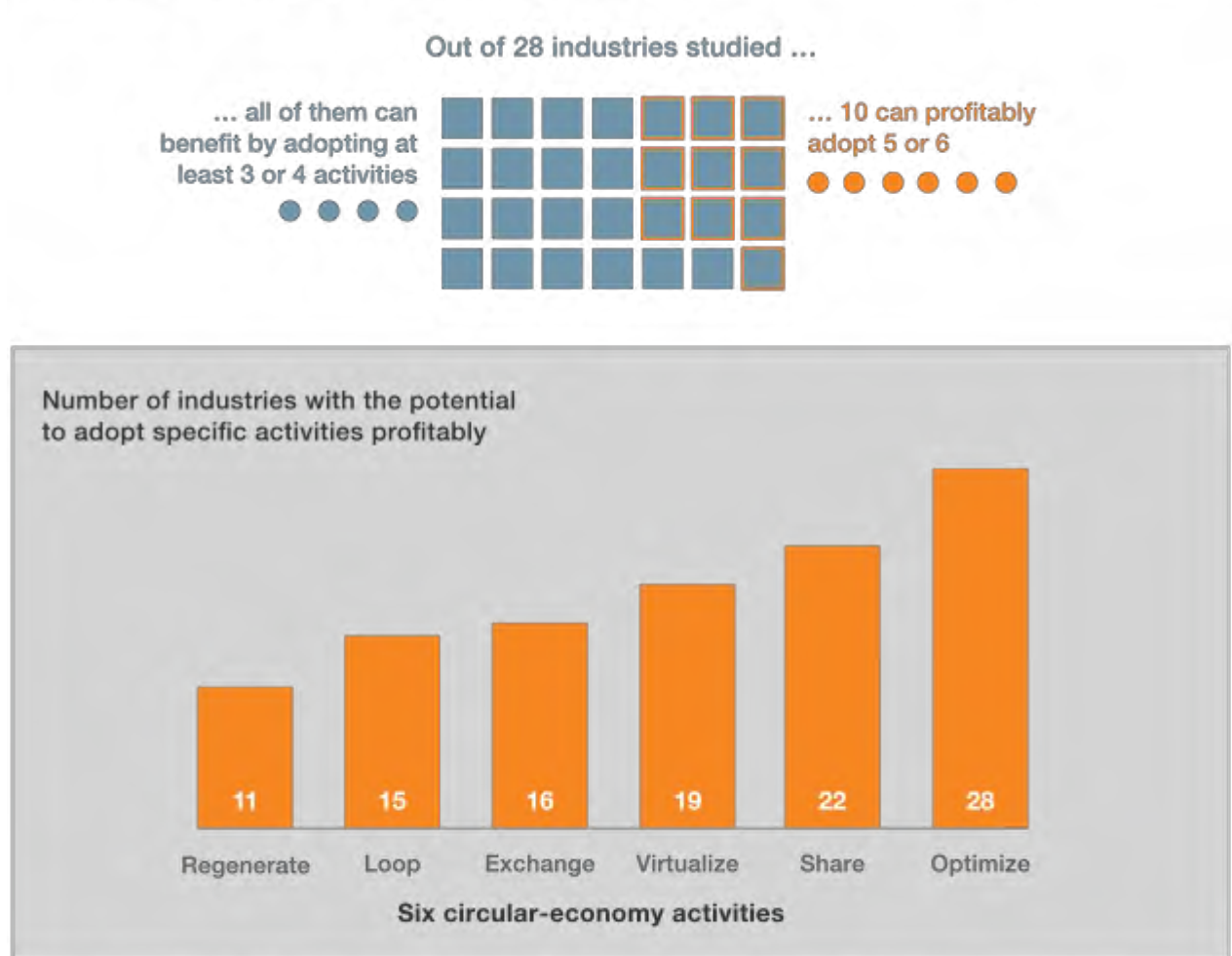
Optimize - improving product efficiency and removing waste from the supply chain;

Loop - closed production and recycling cycles;

Virtualize - virtual delivery of goods and services;

Exchange - upgrading old materials to advanced ones using the latest technologies.

Six circular-economy activities have the potential to improve performance and reduce costs for a number of industries.



Source: *Growth within: A circular economy vision for a competitive Europe*, Ellen MacArthur Foundation and the McKinsey Center for Business and Environment, June 2015

McKinsey&Company

Figure 2.10. Six circular economy activities have the potential to improve performance and reduce costs for a number of industries [46]

Experts often identify many levels or stages of transition to a circular economy. Still, such analysis always has three similar levels: proper use of materials, prolongation of product service life, and smart production and use of products. The

circular economy offers business models that increase resource and energy efficiency in producing and consuming goods and reduce negative environmental impact.

The main instruments of the circular economy model, based on the principles of sustainable development, are environmental innovations and "environmentally friendly" technologies. Companies can choose any business model. The main ones are classified by Accenture experts as follows [47]:

- Resources recovery. This model is based on technological innovations for resource recovery and reuse, which helps eliminate resource losses by reducing waste and increasing the profitability of product production from reverse flows. Such a model may be useful for enterprises producing large volumes of by-products and efficiently recovering and recycling waste.
- Sharing platforms. These are platforms for exchange and joint use, which are necessary to promote platforms for interaction between the product user, which contributes to an increase in its utilization level. This model is most suitable for enterprises that have not fully utilized production capacity and can benefit from the joint use of resources.
- Product-as-a-service. This model involves providing the consumer with a service of using a product rather than owning it. This reduces the consumer's responsibility for the product, but it increases the producer's responsibility for the quality and durability of the product. This model suits enterprises that focus on service delivery rather than product sales.
- Life cycle extension. This model is based on increasing the service life of products by repairing and modernizing them. This helps to reduce waste and resource consumption and prolongs the life of products, which is helpful for enterprises that manufacture durable goods.
- Regenerative production. This model involves the production of goods from renewable resources and using sustainable production methods, which reduces the negative impact on the environment and contributes to the conservation of natural resources. This model is suitable for enterprises that use renewable resources and can reduce negative environmental impact.

The introduction of innovative business models can be aimed at modernizing an existing company model and, in the case of new start-up projects, developing fundamentally new business models. Thus, companies can embody the common principles of the circular economy using different strategies and tools (Fig 2.11).



Figure 2.11. Strategies and tools of the circular economy. Created by the author, based on Accenture Strategy [47].

However, most existing strategies and recommendations are primarily considered in the context of manufacturing enterprises. It should not be forgotten that implementing digital technologies is an important part of economic development. The COVID crisis has particularly emphasized the need to develop online services and other "cloud" technologies. This simplifies the work process, creates more employment departments, increases the possibility of rapid response, and generally positively impacts the country's development. The growth rates of e-commerce, computerized

management of organizational processes, and digital infrastructure are very fast in the world, making them one of the main stimuli of economic development.

Under the influence of globalization and the digitalization of the world economic system, changes are taking place in the structure of international marketing. Digital goods and services are replacing traditional ones. The growth rates of e-commerce far exceed the growth rates of old business models.

Therefore, digital distribution has significant potential for implementing circular economy principles. In the context of globalization and the digitalization of the world economic system, digital distribution changes consumer behavior and worldview, aimed at harmonizing society's relations with the environment and optimizing resource utilization.

Globalization and digitalization entail an increased satisfaction of intellectual needs, namely the need for new knowledge. The information society is developing due to the advanced role of information as a factor of production. The dissemination of information in the context of globalization and the digitalization of the world economic system leads to an increase in education and culture. This is especially relevant for residents of developing countries. Information has a multiplier effect. There is a kind of vicious circle; information generates knowledge. Knowledge turns into qualifications that increase income. An increasing share of income is spent on satisfying intellectual needs, which leads to an increase in the quality of life. To maintain a high quality of life, society needs even more information. Thus, there is a need for new knowledge. Therefore, it can be argued that the synergistic effect of data flows to various spheres of society. The transformation of the concept of sustainable development into the primary paradigm of modern society has impacted the change of international marketing and has contributed to the development of digital distribution. In turn, digital distribution in the context of globalization and the digitalization of the world economy has led to the distribution of digital content that contributes to achieving sustainable development goals and user satisfaction with an intelligent product. This forms a new worldview based on the principles of reasonable consumption, certain restrictions, and the search to harmonize the relationship between

society and the environment. The circular economic development model's main feature is the rational consumption of resources. The development of the digital distribution, based on such processes as globalization and digitalization of the global economic system, has to some extent, prepared the ground for this. In turn, the development of information technology and the dominance of the knowledge economy should lead to realizing the second function of the circular economy - resource recovery. Thus, a combination of different factors of influence decides the essence of the importance of circular economy development for achieving Sustainable Development Goals [48].

Currently, the literature mainly consists of methods and tools for businesses with producing goods and services, as these enterprises generate the largest share of waste and consume resources. However, online services and cloud businesses cannot be excluded; as mentioned above, they have a significant impact. Online companies can implement basic concepts of the circular economy at different stages of their operation, from product development to sales and after-sales service. Here are a few ways in which this can be achieved:

1. Developing products with waste reduction in mind: Online businesses can develop products that align with the circular economy concept, focusing on waste reduction and the use of secondary resources and for example, creating software that allows for the most efficient use of resources on a user's computer.
2. Use of secondary resources and materials: Online businesses can use secondary resources and materials to develop and produce their products. For example, they are repurposing electronic waste to create new devices.
3. Use of platforms for material and resource exchange: Online businesses can use media for the exchange of materials and resources with other companies, which reduces costs and increases resource efficiency.
4. Development of services based on "pay-per-use" principles: Online businesses can develop services that are based on the "pay-per-use" principle (e.g., payment for using software or cloud storage services only when they are used), which reduces costs and waste. For example, instead

of selling their own devices, a company can offer their services based on "pay-per-use" - providing access to software for a specific fee without owning the software product.

5. Developing a system for collecting and recycling waste: Online businesses can develop a system for collecting and recycling waste from their products, which allows for reuse and reduces waste.
6. Application of electronic documentation and electronic signature: Online businesses can use electronic documentation and electronic signature, which reduces the amount of paper documentation and increases document management efficiency.
7. Developing the image of an environmentally friendly company: Online businesses can develop the image of an environmentally friendly company and share information with consumers about their efforts to reduce waste and preserve the environment.

In general, online businesses can use various methods and approaches to implement the basic concepts of the circular economy. It is essential to pay attention to developing products and services that consider their impact on the environment, developing waste collection and recycling systems, and efficiently using secondary resources.

So, let's consider the company BMN in the context of the existing and potential concepts of the circular economy that the company uses or can use. As mentioned earlier, the company consists of four interrelated online platforms. The company does not produce any physical products, so it does not use any resources except electricity or generate waste. Therefore, the company's actual impact on the environment is only through its employees' devices and data carriers. A basic example can be the company's use of a physical server.

Physical servers are equipment used for storing and processing data in computer networks. However, using physical servers can negatively impact the environment due to their energy consumption and emissions of harmful substances into the atmosphere.

Firstly, physical servers require significant energy resources for their operation, leading to large emissions of greenhouse gasses and other harmful substances into the atmosphere. Physical servers also require constant cooling, which requires significant energy resources.

Secondly, physical servers have a limited lifespan and quickly become outdated, which leads to the need for their constant replacement and disposal. This can lead to the accumulation of electronic waste, which can harm the environment if not used in a circular economy.

Therefore, from an environmental perspective, physical servers have a negative impact on the environment due to their high energy consumption and low recycling rate after their lifespan ends. To reduce the negative impact on the environment, alternative technologies such as cloud services and virtualization can be considered, which can reduce energy consumption and use fewer resources. Additionally, it is essential to ensure proper disposal and recycling of old equipment to minimize the negative impact on the environment.

BMN uses a physical server located in Germany, with an average cost of around €2500 per year, without additional services. However, virtual alternatives start at about €150-200 per month. Virtual servers are usually less expensive than physical servers because several virtual servers can be hosted on a single physical server, allowing the cost to be shared among them. Additionally, some providers offer reduced-price or free packages for start-ups like BMN. Therefore, switching to this type of data storage could reduce the company's negative environmental impact and minimize waste and significantly reduce the company's costs for data storage and processing platforms.

In terms of external economic activity, these platforms can be a great tool for a circular economy. The main task of these platforms is to provide a transparent flow of investment capital into Ukrainian businesses, municipalities, and other projects. Thanks to one of the platforms, Mayors Club, several Ukrainian communities are receiving investment for the development of their communities, including sustainable solutions such as renewable energy sources, nature-oriented solutions for cities, waste processing and purification facilities, and more. Thus, the company can support

circular-oriented municipal projects and any other projects and help with investment in them.

Also, using TWOS analysis, we can try to predict some scenarios according to the company's strengths and weaknesses.

SO (Strengths-Opportunities) strategy: As already mentioned, the company exists online. It does not rent any offices and does not use generators to operate (in line with the crisis in the Ukrainian ecosystem). This allows employees to work very flexibly and use the latest cloud platforms and software to develop and create new products. It also provides a high speed of response to the growing demand for different types of investments, in particular for circular products or services. The startup's "pioneering" experience as the first of its kind in the Ukrainian market also provides an advantage in responding to customer and market needs.

WO (Weaknesses-Opportunities) strategy: Most of the weaknesses are related to the internal problems of the company's organization, which greatly hinders the company's development. To address this, it is necessary to reorganize the top-level templates and the flow of information in the company so that all levels of management and employees can respond quickly to external factors. Also, it is worth investing in your staff to develop innovative technologies and products for doing business to respond to growing demand and gain a competitive advantage.

Strategy ST (Strengths-Threats): The company should maximize its superiority to increase competitiveness and gain maximum market share, both existing and potential (due to the war). To do this, it should use the intensification of the advertising campaign at all levels to promote its products as one of the factors that will help in the sustainable reconstruction of Ukraine and its investment.

Strategy WT (Weaknesses-Threats): There is a need to clearly develop plans to manage risks from changes in legislation, and potential damage from Russian aggression, and to constantly seek investment for working capital. The company needs to be confident in its team to help build and enhance a sustainable business, which is impossible without adequate funding, especially during the Russian-Ukrainian war.

2.3 Assessment of the competitiveness of the company

As the company has almost no direct competitors in the Ukrainian market, I will use the most similar initiative existing in the market to compare and highlight the advantages of BMN. This is an initiative from UNDP for Ukrainian entrepreneurs.

The project is implemented by the United Nations Development Program (UNDP) in Ukraine with the financial support of the European Union. Its main goal is to support micro, small, and medium-sized enterprises operating during wartime. Some of them were forced to relocate their businesses from eastern and southern Ukraine or are still working in the territories controlled by the Ukrainian government.

The project provides free development of a commercial website and a start-up package for its promotion to present and sell goods or services online.

Micro-, small and medium-sized enterprises in Ukraine provide about 60% of jobs and 20% of the country's GDP. To restore the economy of the state, which suffered from a full-scale war, it is important to provide entrepreneurs and businesswomen with conditions for comfortable work and profit.

Free website development is one of the initiatives in this process. An online store is an effective tool for doing business, so translating entrepreneurs' and businesswomen's activities online will increase resilience to crises, replenish local budgets, and, in time, help rebuild the job market [49].

From this, we can determine where Business Media Network has an advantage and where it loses.

1) It is a development program from the UN and has a proper investment and reputation. One could argue about the latter since the UN has shown itself to be a completely incompetent and unhelpful organization in the context of the Russian-Ukrainian war. The BMN cannot bolster its name as firmly and is a young project, but a significant advantage of the project is that Ukrainians create it for Ukraine. At a time when the UN has lost the trust of Ukrainians, the BMN has a better chance of gaining it, because only Ukrainians know what they need most.

2) The development program only offers grant aid to 30 participants who qualify. Also, these can only be participants from certain regions of Ukraine, and as we know,

there are affected people all over the country. BMN covers and aims to help entrepreneurs in every corner of Ukraine, and even those under occupation or who have suffered huge losses from armed actions are considered first.

3) The company is still in its start-up phase but already has a base of motivated human capital, producing new ideas and improving the project daily;

4) The company covers several platforms offering a much more comprehensive range of services and works on side projects.

Also, it is possible to assess competitiveness using Porter's method. To assess Business Media Network according to Porter's analysis, the following five factors need to be evaluated:

- Threats of entry of new competitors:

According to the analysis of the market in which Business Media Network operates, the threats of new competitors are medium, as the topic of helping Ukraine is relevant. Still, there are no such initiatives so far. However, given that the industry is highly dependent on technology and innovation, the availability of more competitive technologies could pose significant threats to the company.

- Suppliers:

In the industry in which the company operates, suppliers have a medium level of influence, as several leading players in the market provide the company with products and mainly supply online services. The company's overall dependence on suppliers is medium.

- Customers:

The company's customers are mainly small and medium-sized businesses, as well as individuals. The level of influence of customers on the company is medium, as they have a limited choice of producers in the market and a rather low level of influence on prices.

- Threats from substitute products:

Threats from substitute products are medium, as there are alternative investment options on the market. However, Business Media Network has some competitive advantages in its niche.

- Level of competition:

Competition in the industry in which Business Media Network operates is minimal or medium, as there are several leading players in the market, but the company has its competitive advantages, which, having developed working platforms, are available.

In general, the assessment of Business Media Network's competitiveness, according to Porter's analysis, is average, as the company has both positive and negative environmental factors. However, the company has some competitive advantages in its niche, which allows it to present itself and compete in the market successfully.

CHAPTER 3.

CONSIDERATION OF WAYS OF BUSINESS DEVELOPMENT AND ENHANCEMENT IN THE FRAMEWORK OF CIRCULAR ECONOMY

3.1 Tools and mechanisms for the implementation of the circular economy in the modern world

In the global sense, the circular economy is very relevant, because according to estimates of international organizations, the global market volume of the circular economy is more than 1 trillion dollars in the USD. So now the private and public sectors are working internationally to promote initiatives to remove obstacles and create new solutions that would accelerate the transition to such an economy. The current state of the circular economy at the level of the OECD, the UN, and the EU is considered a means of accelerating the transition of society to a more resource-saving system, thereby increasing competitiveness and responding to global environmental challenges and threats. China and the US, the world's largest emitters of greenhouse gases and consumers of resources, have also recently recognized the opportunities of the circular economy. At the same time, the EU, which is known for strict environmental regulations, presented a documentary Circular Economy Package in 2015 aimed at increasing cost efficiency, current account balance, increasing self-sufficiency, increasing the number of new jobs, and achieving goals in the fight against climate change [51].

Today, many companies implement the principles of the circular economy with the help of various strategies and tools [58]:

1. The design of the future consists of the production of goods in which the main materials can be replaced by renewable or recycled ones. Thanks to this solution, the use of resources and the amount of waste in the production process are reduced. For example, Adidas has developed running shoes made of 100% recycled materials. In production, one type of material is used and no glue is used. In this way, after use, the shoes can be recycled to produce a new pair. And General Company Electric uses 3D printing in the parts manufacturing process to save material.

2. Sharing and virtualization. Bright examples of using this strategy are BlaBlaCar, Uber, and Airbnb. This type of service works successfully in many countries of the world.

3. The "goods as a service" strategy seeks to replace the model of selling goods with selling services. A classic example is the Rolls concern Royce offered the market the service "Power - by - the - Hour", which consists in not buying aircraft engines, but paying for their use based on a fixed rate for 1 hour of operation. Thus, the life cycle of the engine increases by 25%. Another example is the company Volvo, which enabled the client to choose models through the site and sign up for a subscription with a fixed monthly payment, which is an alternative to leasing or buying a car.

4. Reuse in production, when used products or components become part of new products. So, Canon takes back products at the end of their life cycle and uses the components in new devices, without reducing the functional characteristics of the materials. The same approach is embodied by the Dell corporation, using used products for the production of spare parts. And the Michelin group annually returns 17 million tons of used car tires to the production process, because thanks to R&D developments, they become a valuable material again.

5. Reuse in consumption, when companies can increase the life cycle of a product by optimizing service. For example, the eBay marketplace offers restored after damage or failure, but fully functional, devices on a special site at reduced prices. The reuse business model offers to sell and buy used products. So, there is a Retuna supermarket in Sweden, the range of which, from furniture to books, consists of second-hand items.

6. Industrial symbiosis and recycling of production waste can significantly increase business efficiency. The first example of symbiosis in the concept of circular economy is the project in the city of Kalundborg (Denmark), where the participating companies were united by the principle of interaction when the production waste of one business becomes a resource for another and at the same time, economic costs and CO2 emissions are reduced. The consortium includes the largest oil refining company

in Denmark, which belongs to the energy giant Equinor, and the pharmaceutical company Novo Nordisk.

7. The familiar term "recycling" is also a circular economy strategy. At the end of the product's life cycle, the materials are recycled in a safe way. For example, sports shoe manufacturer Nike launched the Nike initiative almost 30 years ago Grind. Old sneakers, collected all over the world, were used as a material for covering sports fields. Since the launch, about 28 million pairs of shoes have been recycled. Today, many Dutch designers apply the principles of sustainable development in their work. For example, B. Van Cutwijk transforms slaughterhouse waste into leather, sewage residues, revealing their hidden colors, into a glaze, and cremation ashes into delicate porcelain. Thomas and Jana Tol started House of Thol. Their products make "green life" easier. The studio is engaged in the development of natural solutions for storing plants, fruits, and vegetables and the creation of stylish tools for living on the basis of green living. In collaboration with various partners, the designers develop furniture and lighting produced using leftover materials with a small carbon footprint. House priorities of Thol: Efficient manufacturing, using durable materials, and creating products that can be repaired. Studio Mixture, the founder of which is D. Biryukova, striving to solve the problem of environmental pollution, provides unique design solutions, such as products, new materials, and services based on the realization of waste, and gives waste a second life in the framework of production, packaging, delivery of goods/services. It conducts research together with administrative and educational institutions on the existing problem of cities (states) based on waste management. The results of the study raise awareness and create a positive trend for change. D. Biryukova also works in close cooperation with recycling companies to develop products, materials, and services based on the existing library of recycled materials.

Other examples of foreign companies that successfully apply circular economy business models according to the approaches [59]:

- circular suppliers: Ford, Fairphone, 3D Hubs, Desso, Toyota, Cisco;

- recovery of resources: Coca-Cola, Maersk, Michelin, Philips, Walt Disney World resort;
- platforms for sharing and sharing: Patagonia, BlaBlacar, Nearly New Car, BMW, Drivy, Daimler, Lyft;
- continuation: Bosch, Caterpillar, Volvo, Renault, Apple, BMA Ergonomics, Michelin;
- product as a service: Rolls-Royce, Mud Jeans, De Kledingbibliotheek.

The circular economy is a radically different way of doing business, forcing companies to rethink everything from how they design and manufacture products to how they interact with customers. One of its biggest differences is the role of the customer. The emphasis is no longer on consumption but on the use of the function. This puts different demands on the business community to build long-term relationships in their business models. The advantage is that companies benefit from each other's success in this cascade of different cycles. It also opens up new opportunities in infrastructure, energy, and manufacturing when they adopt the circular economy model.

The closed cycle economy has become a priority in long-term strategic planning for post-industrial and industrial countries, in particular, the EU, the USA, Japan, South Korea, and China. The beginning of the policy of economic reforms and openness in 1978 contributed to the rapid economic growth of the PRC. Accelerated industrialization also had a negative impact on the environment. According to the Numbeo global database, China is among the top 10 countries in terms of the air pollution index - 7th position after Myanmar, Mongolia, Afghanistan, Bangladesh, Vietnam, and Egypt [60]. A green economy ensures higher GDP growth rates, creates new jobs, stimulates economic progress, and simultaneously reduces risks such as the effects of climate change, increasing water scarcity, etc. According to UNEP estimates, the need for annual financing for the "greening" of the world economy is from 1.05 to 2.59 trillion dollars in the USD, which is less than 1/10 of all annual global investments. The largest volume of "green" investments within the framework of environmentally-oriented measures provided for by the state packages of economic recovery actions

falls on China (22,300 million euros), Japan (12,300 million euros), the Republic of Korea (9,300 million euros), France (5,700 million euros), Denmark (700 million euros), Belgium (118.8 million euros) [61]. European countries have already assessed the importance of the circular economy in ensuring sustainable development. According to preliminary forecasts, the construction of a circular economy in Europe will lead to the creation of 580,000 jobs and annual savings of 500 euros in each household on energy costs. According to EU calculations, "the implementation of resource-efficient production technologies at all links of production chains will allow reducing the industrial demand for raw materials by 17-24% by 2030 and the annual costs of enterprises by 630 billion euros" [62].

Considering the development trends of the circular economy, it is worth noting that even in the European Union, despite the common framework approaches (circular economy package), each country has national peculiarities in the implementation of this concept. In particular, Germany, with a strong industrial economy, has formed the basis of a circular economy through material flows and availability of materials, and the Netherlands through innovation in materials and business models. Finland is the first country in the world to develop a national roadmap for the transition to a circular economy. Scotland became the first country to join the Circular Club Economy 100 (CE 100), created at the initiative of the Ellen MacArthur Foundation, with the aim of stimulating cooperation and innovation for the development of a circular economy. Large EU countries, such as Germany, Great Britain (formerly the EU), and France, tend to have higher rates of investment, patents, and jobs in circular economy sectors, allowing them to take the lead in circular economy development assessments. In the 2018 circular economy ranking, Germany took first place in terms of the number of patents related to the circular economy, more than twice ahead of France, which was in second place (1,260 patents versus 542). Great Britain and Germany were the leaders in terms of "circular" investments, significantly ahead of other countries of the Union [63]. The EU economy has generated unprecedented wealth over the past century. Part of the success is explained by the growth of the productivity of resources.

According to the National Institute of Strategic Studies of Ukraine, "the development and development of alternative energy sources in Ukraine should be included among the current areas of bilateral cooperation with the EU in this area; creation of production facilities for the processing of household and industrial waste; development of production of organic food products. The prospects of these directions are due to the presence of large markets in the EU and significant demand for these types of products from enterprises and households, support for the development of such industries at the level of the European Commission." As for the 27 active members of the EU, in the context of achieving the goals of sustainable development, the relevance of the circular economy continues to grow. 30 years have passed since the first mention of the "circularity" of the economy, but only after its introduction in the EU, its popularity has grown rapidly, and world leaders are gradually realizing its importance for achieving sustainable development. On March 11, 2020, the European Commission adopted the Action Plan on the "circular" economy (Circular Economy Action Plan), which is an important component of the agenda of the strategy of the European "green" course (European Green Deal). The purpose of this Plan is to reduce consumption in the EU and double the reuse of resources in the coming decades while promoting economic growth [63]. Moving to a closed-loop economy, the EU set the following goals and priorities: – to stop the removal of separately collected waste to landfills;

- to develop economic tools, thanks to which the removal of waste to landfills is reduced;
- to simplify and harmonize methods of tariff calculation;
- promote reuse;
- to stimulate industrial symbiosis: the transformation of by-products of one industry into raw materials for another;
- economically stimulate packaging eco-design and recovery and recycling schemes.

The EU also plans to:

1. Recycle 65% of municipal waste and 70% of packaging by 2030.

2. Produce plastic packaging that is 100% recyclable.

3. Take no more than 10% of solid household waste to landfills [63]. In addition to the above, the EU must implement the Roadmap of a resource-saving Europe in the next five years. As these actions are binding on all EU countries, they have the potential to have a major impact both inside and outside the EU. The effect of the circular economy in Europe alone is estimated at 570 million euros annually. State support and stimulation of green modernization of industrial enterprises in EU countries takes various forms: environmental taxes; tax benefits; preferential loans; direct financing of environmental projects (grants); subsidized loans, etc. On average, EU countries spend 0.8% of their GDP on environmental protection. Thus, in Poland, the average annual volume of financing of environmental protection programs is 1-1.3 billion euros. One-half of them is covered by national funding, and the other half by international funding [63].

3.2 Circular economy for Ukraine: realities and opportunities

Among the urgent problems today, the low level of competitiveness of the domestic industry comes to the fore due to the lack of resources, lack of innovative technologies, and insufficient material, technical and resource support. The issues of rational use of nature (greening) of domestic industrial productions, reduction of the material intensity of domestic products, and stabilization of resource provision of productions remain unresolved. As a result, there is a decrease in the number of domestic enterprises, and the ecological condition of industries is deteriorating, which is accompanied by a significant level of environmental pollution, negatively affecting the deterioration of the nation's health. The study of the circular economy model and directions for improving waste management in Ukraine is one of the directions that can solve the problems of resource provision, especially when the whole world is faced with the problems of the pandemic and the closing of borders. Each country must choose the path of high-quality, innovative resource provision of industrial production, the salvation for this is the circular model of production.

The circular economy in Ukraine is beginning to take shape, the introduction and implementation of the principles have significant obstacles, and the prospects for its development are quite illusory. After all, the market of secondary raw materials is opaque - more than 50% of it is in the shadows [58]. At the same time, the market of secondary processing and waste-free technologies, including innovative technologies, is at the initial stage of development. In addition, the second negative factor for the development of the circular economy in Ukraine is the absence of tariffs for the processing of secondary resources. In Ukraine, there are 6,500 authorized landfills (which is equal to the area of Cyprus), of which 25% do not meet environmental standards, and 35,000 spontaneous landfills (equivalent to the area of Belgium) [59]. As of 2017, 36 billion tons of waste were accumulated on the territory of Ukraine, of which 1.5 billion tons was hazardous waste. In addition, in order to effectively manage the secondary raw materials market in Ukraine and develop a circular economy, it is necessary to adopt transparent laws on waste management. The beginning has already been laid, the Cabinet of Ministers of Ukraine adopted Resolution No. 313 dated 25.04.2018 "On the Formation of the Coordination Council for the Implementation of the National Waste Management Strategy in Ukraine until 2030" [57] and approved the National Strategy for Waste Management in Ukraine until 2030 [56].

The official information of the State Statistics Service of Ukraine shows that in the past eight years, Ukrainian realities of developing a circular economy from a waste of the I-III classes of danger from the economic activity of enterprises and organizations have had little success in terms of waste processing. The general indicators according to various data regarding waste of I-IV hazard classes, taking into account the waste generated in households, reach the volume of landfills from 4 to 7% of our country. The main indicators of waste generation and management in Ukraine for 2010–2018

In Ukraine, the dynamics of waste management are unstable, the analysis of statistical indicators includes data on disposal, incineration, and removal to specially designated places or objects. According to statistics, only a small proportion is subject to secondary processing.

Regarding indicators of the total amount of waste accumulated during operation in specially designated places or objects (I–I V hazard classes, taking into account household waste), it is 13,267,455.0 thousand tons since 2010, and in 2018, the indicator decreased by -295,026.5 thousand tons (-2.22%) and is 12,972,428.5 thousand tons in 2018. Regarding the dynamics of waste management indicators from the economic activities of enterprises and organizations, it is worth noting that enterprises pollute the environment less than households. Thus, in 2010, the volume of waste amounted to 16,236.3 thousand tons, and in 2018 - 12,217.2 thousand tons, which is less than 4,019.1 thousand tons (-24.75%). Therefore, it is worth highlighting the more intensive activity of indicators for reducing the amount of waste in enterprises and organizations compared to households over the past eight years. Therefore, let's dwell on the reasons in more detail. Thus, I. V. Mynchynska analyzed the indicators of the number of registered business entities in the economy of Ukraine during 2012–2018 and the number of economically active enterprises. "Despite the negative dynamics of the number of registered business entities in 2016-2017, when their number decreased to 1,865,631 units. 2016 and up to 1,805,144 units. In 2017 and 2018, the number of registered business entities increased again to 1,839,672 units. In general, compared to 2012, their number increased by 14.97%. Regarding the number of economically active enterprises in the economy of Ukraine, the number of economically active enterprises in 2018, compared to 2012, increased from 622,538 units. to 666,986 units, i.e. by 7.14%" [62].

Currently, Ukraine, based on the examples of the EU, can gradually implement the processing of such materials as:

1. Paper, cardboard, PET, and glass. In Europe, almost half of all types of waste are recycled, and mandatory recycling of these materials is introduced.

2. Old clothes. Companies such as H&M and Marks&Spencer collect used clothing using special incentive programs for customers through a system of discounts and offers.

3. Organic waste. This is a potential source of natural fertilizers for agriculture. The implementation of organic waste processing will contribute to the normalization

of the price policy of agricultural producers by increasing competition in the field of fertilizers and reducing the use of mineral fertilizers, which can have a negative impact on the external environment.

4. Metal. This type of raw material can be recycled an unlimited number of times, because, during remelting, the metal does not lose its properties, unlike plastic. The introduction of the latest technologies for metal processing will help reduce the volume of raw material imports and more rational use of resources.

Indeed, in essence, the circular economy involves the creation of so-called durable products and will practically increase the efficiency of the reuse of resources in the industrial sector. Today, experts are also already distinguishing some models of circular economy development in individual countries. For example, Germany is forming a circular economy due to the revitalization of material flows and the availability of materials for companies, the Netherlands - due to innovation, Scotland - thanks to a special investment fund that finances circular economy projects, China - weaves the circular economy into the creation and development of new industrial parks that must comply with the requirements of the circular economy, etc. And Finland was the first in the world to develop a national road map for the transition to a circular economy. At the same time, developed countries do not forget about the protection of intellectual and industrial property. Therefore, in the last two years, the number of copyright patents related to the protection of innovations in circular projects has increased sharply. As we have already written in previous materials, nowadays the funding paradigm and requirements for borrowers are practically changing. Now, for example, the European Investment Bank gives preference to the financing of circular economy projects. That is, the circular impulse is gaining momentum in countries with a market economy.

It is important that Ukraine does not fall out of this process. After all, there is still no systematic strategic vision for the development of the circular economy in Ukraine. There were only general declarative provisions such as increasing resource efficiency, stimulating innovation and implementing circular economy provisions, and increasing effective waste management.

However, it is worth noting that in Ukraine in the last two years, there are also the first effective projects in the private sector, for example, projects for the creation of biogas complexes, processing of fallen leaves into paper, production of meal from the waste of non-alcoholic beer production, production of glasses frames from coffee grounds, etc. But new unique projects related to the circular economy in Ukraine are quickly being taken over by foreign partners and investors. Therefore, in our opinion, the state should, within the framework of the implementation of the sustainable development strategy, more systematically develop a clear plan for the implementation of best practices for the development of the circular economy in the country.

February 25, 2021, the online event "Presentation of the component "Circular economy and new growth opportunities" of the " EU 4 Environment " program took place in Ukraine. Fourteen enterprises and their representatives received an award for their active participation in resource-efficient and clean production clubs (REC clubs) in the Khmelnytskyi and Poltava regions of Ukraine. The local authorities were also awarded for promoting the development of the RCHEV clubs. Participants dealing with the issue of "green" economy, circular economy, resource efficiency, clean production, industrial development, and environmental protection were able to familiarize themselves with the "EU 4 Environment " program and learn about the measures initiated by the Center for Resource Efficient and Clean Production (RECHV Center) in Ukraine. The program "European Union for the Environment" ("EU 4 Environment"), which is financed by the European Union, is designed to help the countries of the Eastern Partnership: Azerbaijan, Belarus, Armenia, Georgia, the Republic of Moldova, and Ukraine, to preserve their natural capital, improve the environmental well-being of the population and develop new opportunities for development. With a total budget of almost 20 million euros for six countries, the " EU 4 Environment " program is implemented from 2019 to 2022 with the support of 5 international partners, including the Organization for Economic Co-operation and Development (OECD), the United Nations Industrial Development Organization (UNIDO), the United Nations Environment, the United Nations Economic Commission for Europe (UNECE) and the World Bank. In view of the important

achievements of the Program "Greening the Economy in the Eastern Partnership Countries of the European Union" (EaR GREEN), in which 48 small and medium-sized enterprises demonstrated the effectiveness of UNIDO's approach to REE in Ukraine, UNIDO continues to promote and develop national potential in Ukraine to help enterprises switch to resource-efficient and cleaner production. UNIDO is also working to identify opportunities to support the creation of circular chains and eco-industrial parks in order to raise awareness of the opportunities and benefits of the circular economy at national and regional levels among businesses, governments, and society. In Ukraine, the Center for Environmental Protection is a national partner of UNIDO for the implementation of the component "Circular economy and new growth opportunities" within the framework of the "EU 4 Environment" program.

By 2030, the EU plans to: recycle 70% of packaging, and 65% of municipal waste; take less than 10% of solid household waste to landfills; to produce fully recyclable plastic packaging [51]. Also, in the next five years, the EU will implement the so-called "road map" of a resource-saving Europe. Of course, EU member states to support such actions with the help of environmental taxes, benefits, financial support, and grants. EU countries spend about 0.8% of GDP on environmental protection [51].

Adoption of the leading European experience in sustainable development and circular economy by our country is not only desirable but also necessary in terms of its European integration. At the Ukraine-EU summit in 2020, Ukraine and the EU signed the agreement "Climate Package for a Stable Economy in Ukraine", which will contribute to the financing of projects related to a clean and climate-neutral economy, as well as additional opportunities to attract investments to the Ukrainian economy. EU support has a positive effect on the preservation of the environment and the "green" and sustainable development of Ukrainian enterprises [52]. In many EU countries, the linear model still dominates, but each country is trying to use the circular model, given its significant advantages. In France, the state pursues an active policy in this area, supporting centers for the recycling and reuse of consumer goods. Specialized workshops have also been created in Paris, where residents can learn how to repair their household items. In 2016-2018, thanks to such workshops, the total amount of

waste was reduced by more than 2,600 tons (17% of the total volume of waste in France). In Germany, the FairWertung company reuses the clothes that people bring to make designer items, bicycle seat covers, etc. [51]. Due to the gradual increase in electronic waste, DELL decided to use a circular process in production by expanding the closed loop of plastic recycling, as well as installing carbon filters on a certain amount of digital equipment. Carlsberg's interesting idea is to develop a fully biodegradable wood fiber beer bottle, the implementation of which will make it possible to eliminate waste by creating ecological products. Thanks to the collaboration between Timberland and Omni United has the ability to produce tires that are later suitable for shoe soles, meaning a significant reduction in the number of tires burned without reuse. The NESPRESSO company implements a return program, the advantage of which is the possibility to leave used coffee capsules in special bags for recycling; they are separated from coffee grounds, which are used as fertilizer [63].

Other examples of international companies that successfully implement circular principles (according to typical approaches) [63]:

- 1) recovery of resources: Coca-Cola, Maersk, Michelin, Philips, Walt Disney World;
- 2) platforms for sharing and sharing: BlaBlacar, BMW, Daimler, Drivy, Lyft, Patagonia, Nearly New Car;
- 3) continuation of the product life cycle: Apple, BMA Ergonomics, Bosch, Caterpillar, Michelin, Renault, Volvo;
- 4) goods as a service: De Kledingbibliotheek, Mud Jeans, Rolls - Royce;
- 5) circular suppliers: 3D Hubs, Cisco, Desso, Ford, Fairphone, Toyota.

Of course, the global development of the circular economy is also affected by the coronavirus pandemic. The Covid-19 crisis has consequences not only for people's health, but also for economic ones, and is also an impetus for rethinking the systems on which the economy is based. The crisis once again emphasized the shortcomings of the linear model of the economy, which causes environmental pollution [51, 52].

A reduction in consumption has led to a decrease in production. In order to stimulate economic growth with smaller volumes of consumption and production, it is

worth using new sustainable approaches to the development of economic systems. It is the circular model that is an appropriate approach that aims to preserve materials and resources as long as possible without harming the environment. During the pandemic period, plastic, unfortunately, plays a crucial role, as consumers require personal protective equipment and stockpile sanitary products, the global medical community requires protective equipment, supermarkets tighten their packaging, etc. Therefore, it is worth making decisions to reduce the use of plastic, while forming a strategy for sustainable economic recovery. The circular economy can play an important role here because the use of reusable packaging and recycling will not save money and reduce the level of environmental pollution. This can be achieved by removing excessive volumes of single-use plastic products, which can be replaced with environmentally friendly materials or products suitable for repeated use [51].

In Ukraine, the pace of implementation of circular principles is, unfortunately, much slower than in developed countries. At the same time, the volume of industrial production in Ukraine is increasing, therefore the natural resource potential of the country is constantly decreasing, and significant losses are caused by the irrational use of resources and the negative impact of production waste on nature. In 2020, more than 10 million tons of household waste were generated in Ukraine. About 6,000 landfills and landfills with an area of 9,000 hectares were used for their burial [51]. Due to the separate collection of waste using sorting lines, incinerators, and factories, only 6.3% of all household waste was disposed of and processed. Most of it (4.6%) ended up in waste processing lines and recycling points, and a smaller part (1.7%) was incinerated. According to expert estimates, the volume of services for the removal of household waste exceeds UAH 5.2 billion. In our opinion, the lack of a general understanding of the problem at various levels, and insufficient funding hinder the introduction of new technologies and modern methods of waste management. In order to form an appropriate waste management system, and to build new waste processing lines, and factories, a clear state strategy, and measures are needed, as well as the unification of territorial communities, which will enable joint efforts to achieve the desired result. In 2021, Ukraine rose to 27th place in the global Sustainable Rating Development Index

(SDI) – the so-called ecological index, which adjusts the efficiency of using materials per person to the level of emissions. In this rating, Ukraine is ahead of the developed countries of the world, such as China, the USA, etc., because they have low indicators due to the high load on fossil-earth resources. Costa Rica is in first place, and Mongolia and Cameroon are at the bottom of the ranking [57]. Let's consider examples of involvement in the circular economy of enterprises of the Lviv region: - PJSC "Cardboard and Paper Company" uses paper waste (magazines, books, cardboard, etc.) as a secondary raw material, which it accepts or buys at a low price from other companies; - "Greencup" LLC, using bamboo, corn starch, rye, bran, manufactures ecologically clean disposable tableware; - visitors to the studio "Miss "Princess" can rent out the dress, receiving a percentage of the cost, or sell it, that is, there is both an ecological and an economic benefit; - on the Garbage interactive site, you can find interesting information about the correct sorting of garbage, the nearest collection points. For a faster transition to circularity and waste minimization, it is advisable for Ukrainian manufacturers to adopt the progressive experience of EU enterprises that adhere to a number of basic principles:

- obtaining raw materials, if possible, from recycled materials, and not from new extraction;
- reengineering of production processes to avoid the generation of waste inside and outside the company;
- inclusion of energy consumption and waste generation from products/machines for optimization calculations;
- application of ecodesign and its integration into product policy;
- changing the focus of attention from labor productivity to resource productivity;
- formation of production processes with a minimum number of technological stages;
- implementation of continuous processes to maximize the use of raw materials and energy;

- increasing the unit capacity of units and the intensity of production processes, their optimization and automation;
- changing the linear production system to a circular one, with maximum recycling potential, etc. [51].

3.3 Establishment of ways and opportunities of improving business development in the framework of circular economy

In Ukraine, there is an unstable dynamics of waste management, statistical data show that a small part of the waste is sent to secondary processing and, the rest is subject to disposal, a large part is burned or transferred to specially designated places [51]. The annual increase in the amount of waste indicates the imperfection of the waste management system, which is determined by the following trends:

- accumulation of waste in all sectors, which leads to environmental pollution, which negatively affects the health of the population;
- the lack of a culture of handling household and industrial waste by citizens of Ukraine and the low possibility of proper disposal;
- storage of waste without taking into account potential dangerous consequences;
- improper use of waste as secondary raw materials.

This situation is further complicated by the consequences of the military actions of the Russian Federation against Ukraine. Before the start of the offensive of the Russian troops, 17 waste paper processing enterprises, 39 - polymers, 19 - PET raw materials (plastic bottles), and 16 - broken glass (according to PwC research) operated in Ukraine, in particular in the following cities: Kyiv, Lviv, Poltava, Odesa. The same enterprises existed in Mykolaiv, Kharkiv, and Mariupol. Glassware was headed to the Gostomel glass factory, and waste paper to the Zmiiv factory in the Kharkiv region. [61] Since the beginning of the war, these regions have suffered significant destruction and are under constant shelling, Gostomel was under occupation, and Mariupol is still a city not controlled by Ukraine. This led to a reduction in the capacity of household waste processing by about 30–35%. If we talk about the losses suffered by business entities in the field of waste disposal, the direct losses amount to 95.36 million dollars

in USD, and the loss of profits – is 11.9 million dollars in USD. These indicators were evaluated in separate regions: Donetsk, Luhansk, Kharkiv, Chernihiv, and Kyiv regions. However, on the basis of the data of these regions, an approximate assessment of damages throughout the territory of Ukraine is possible [63].

As a result of the movement of internally displaced persons to safe regions, the load on individual landfills increased, which even before the start of a full-scale war had used up their resources and needed to be closed. Until February 2022, the issue of the construction of waste processing plants was raised, then with the beginning of the armed aggression of the Russian Federation, this topic took a back seat [52]. Analyzing waste directly from hostilities and missile attacks, we can say that they still remain in forests, fields, water, cities, and towns. These are unexploded shells or debris from their explosion, batteries, used disposable NLAW (anti-tank guided missile) systems, and destroyed or damaged vehicles (a total of 200,000 cars and trucks), for example, in the city of Bucha, Kyiv region, where a peculiar "the graveyard of cars". There are significant amounts of medical waste as a result of the expiration of drugs or the destruction of pharmaceutical organizations by airstrikes. In addition, a large amount of military equipment (about 325,000 tons) remains in many areas where combat operations took place before the liberation of the occupied territories by the Armed Forces of Ukraine. However, the equipment contains precious high-quality metals, and as of today, Ukraine has the opportunity to process it. A large amount of waste from the destruction of objects causes damage to the territory of Ukraine, pollutes water, soil, and air, and produces emissions of greenhouse gases, which in the future lead to climate change [54]. One of the biggest problems is waste from damage or destruction of infrastructure facilities. Since the beginning of the full-scale war in Ukraine, about 120,000 private households and more than 20,000 multi-story buildings have been destroyed. In the Kyiv region, Chernihiv region, and Sumy region, the amount of construction waste is about 15.2 billion tons. Some construction waste is subject to further processing, but before that, building debris must pass a laboratory test for the content of certain substances, which is an additional cost to the state. However, a significant share is a heat-deformed debris, or those containing asbestos (minerals from

the silicate group), which will not be reused. According to the Minister of Development of Communities and Territories of Ukraine, Oleksiy Chernyshov, notes that in addition to these destructions, critical infrastructure, bridges, roads, and power plants were also struck [51]. Here it is worth mentioning the consequences of the massive missile attack on October 10: the shelling of energy supply facilities led to the disruption of electricity supply in 15 regions [56]. Due to the high load on the energy system, emergency and scheduled power outages were implemented in all regions of Ukraine. In this regard, the demand for lighting devices increased sharply compared to previous months: the volume of purchases of lanterns increased by 2.5 times, power banks by 4 times, generators by 2.5 times, batteries by 4.5 times, and radio receivers by 3 times .5 times [59]. The power elements of the lanterns are batteries and accumulators - hazardous waste of the I class with the highest content of toxic substances. Power banks are portable chargers, and the basis of the composition is lithium-ion or lithium-polymer batteries, the power bank body has a long period of decay, and the internal contents are highly dangerous for the environment, since spent electrolytes are toxic [60]. An electric generator is a device that produces electricity from other types of energy, the need to dispose of the generator is related to its design, which contains many metals, such as iron and copper. Also, plastic and rubber are used in their production, and all this is subject to recycling and cannot be thrown into a landfill. These products are the most popular and in demand, today, and will certainly help to support the comfortable life of Ukrainians in winter, but it is important to realize that an equally important part of the operation of all the above-mentioned devices is their safe disposal without harming the environment or using them as secondary raw materials. For example, an interesting fact is the particular application of the circular economy for the needs of the Armed Forces: the use of chargers for electronic cigarettes and the production of systems for dropping explosives from drones, as well as power banks [63].

As a result of missile attacks on the infrastructure of Ukraine, in addition to problems with the supply of light, there are also interruptions in heat transfer. In the places of residence of the citizens of the state, where possible, a potential option for obtaining heat is the burning of non-toxic garbage, and for heating multi-story

buildings in this way, it is necessary to build a safe plant that will not produce toxic substances. However, this involves the burning of raw materials, which makes their secondary use impossible, which is not a sign of a circular economy [63].

The introduction of a closed-cycle economy into the Ukrainian economy will guarantee the sustainable development of the state. In addition, this is another step towards full European integration of Ukraine. However, implementing all the principles of the circular economy is a long-term process that will face many problems during the implementation of the idea. The main problem is the established mentality of Ukrainians and the lack of a culture of separation of household waste. Industrialists believe that it is cheaper to throw out industrial waste than to process it. And in connection with the careless attitude of Ukrainian citizens towards the distribution of garbage by groups, it is more profitable for waste processing enterprises existing in Ukraine to import secondary raw materials from other countries [63]. The result is the self-destruction of ecology and the accumulation of landfills with garbage. A business model that aims to make money on the sorting and processing of raw materials is more attractive for the growth of the Ukrainian economy than withdrawing foreign currency to buy the same raw materials abroad. As mentioned, in the course of military operations there is a large amount of waste, which on the other hand is a potential for processing enterprises. This is the key to the rapid reconstruction of Ukraine after the war. Ukraine is a powerful producer of bioactivators for fermentation or composting - biological processing tools, which is the principle of a closed economy. In addition, many enterprises producing goods or services are improving and installing equipment for the repair or processing of secondary raw materials with further use at the next stages of production. An important factor in this process is compliance by the organization's managers with the concept of extended responsibility of producers, which involves their responsibility not only for the development of the product but also for the collection and disposal of packaging and expired goods [55]. The circular economy involves the use of renewable sources of electricity. Here we are talking about both individual consumers and industrial giants. As mentioned above, as a result of the missile attack on October 10, the demand for devices for lighting, power generation,

or heat transfer increased. These are goods that are rarely used as secondary raw materials. Therefore, it is important to choose more ecological means of obtaining energy: for manufacturing organizations, this is the use of water, wind, or solar energy, for the household consumer - portable solar panels.

CONCLUSIONS AND PROPOSALS

Thus, it can be stated that the circular economy is a prerequisite and driver of the new industrial revolution. Conceptually, the circular economy aims to achieve two goals. On the one hand, the value of used products must be recovered to maximize economic efficiency. On the other hand, the restoration of this value leads to a reduction in the negative impact on the environment and thus compliance with the socioeconomic and environmental requirements of sustainable development.

Thus, summarizing the above, the circular economy is a restorative and regenerative system based on the cyclical nature of resource flows, which involves the formation of innovative solutions that synthesize environmental and economic aspects, creating a social basis for inclusive and sustainable development.

Also, the benefits of the circular economy are quite well quantified. For example, from a macroeconomic perspective, a circular economy investment strategy could lead to a 10% reduction in raw material costs and a 7% increase in GDP in the European Union in 2030 compared to the conventional business model [*]. However, such a leap in development undoubtedly requires strategies that are focused on the specific potential of the economy, as well as the appropriate infrastructure and administrative capacity. An important long-term opportunity for the circular economy is to reduce direct and indirect environmental costs. Direct costs are associated with waste management. However, the indirect costs of using natural resources are also relevant. Globally, an international group of resource experts under the United Nations Environment Programme estimates that these costs amount to up to Environment Program, and these costs amount to up to USD 2.4 trillion.

If we talk about the circular economy through the lens of the BMN case study, it can serve as one example of how online services are using, or could potentially use, existing circular economy concepts. From our review, we have found that even without producing any physical products, a company can still reduce its negative impact on the environment. For example, it can be the use of alternative technologies, such as cloud services and virtualization, which help reduce the consumption of electricity and resources used by online services.

Also, from the point of view of foreign economic activity, platforms such as BMN are becoming a constant assistant in the implementation of some circular economy concepts. The purpose of BMN is to ensure a transparent flow of investment capital into Ukrainian businesses, municipalities, and other projects, a huge share of which are focused on sustainable solutions, such as renewable energy sources, environmentally friendly solutions for cities, waste recycling and treatment facilities, etc. As such, the company can support circular economy-oriented municipal projects and any other projects and help with investments in them.

The circular economy is inextricably linked to the formation of new business models focused on reducing the number of resources used, implementing reuse or a closed cycle of production, restoration, redesign, recycling, and recycling to ensure a long life cycle. The circular economy is identified with the concept of the "circular economy" or with a closed production cycle, which reflects a pre-industrial approach to almost all forms of agriculture and industry. At times Ukrainian realities implementation of the circular economy has been proven to regulate the economy's closed cycle, taking into account "best" practices in the field of circular and bio-economy, with the construction of a multi-level hierarchy of waste management. In Ukraine, the dynamics of waste management are unstable. According to statistics, only a small proportion is subject to secondary processing. Most of the waste is taken to landfills, after which the probability of its secondary processing is significantly reduced due to the existing problem of lack of proper sorting and separation of the necessary amount of raw materials for further processing. Among industrial enterprises, the most waste is generated in the mining and processing industry, but in the processing industry, their generation has decreased by three times, which, accordingly, gives it greater chances for intensive implementation of the circular economy model.

Therefore, the introduction of the concept of circular economy is an important step for the development of the state and integration into the European Union, and for Ukraine to gain the reputation of a state with conscious citizens. The circular economy is a way to clean the country and reduce the accumulation of garbage, as well as saving

costs for their removal and storage at landfills since the process of processing secondary raw materials is cheaper and opens up new potentials for the development of enterprises. Of course, war brings destruction and puts most innovative projects on hold. However, now, more than ever, it is important to quickly and profitably eliminate the consequences of military actions, so on the other hand, this is a potential for the development of a circular economy in Ukraine. We are talking about machinery, transport, and the ruins of buildings that can be recycled and used in the post-war reconstruction of our country. Ukraine is a European country and conscious citizens of the state must change their attitude to waste and give it a second life, reduce the impact of harmful substances in the air, water, and soil, which will lead to the multifaceted and successful development of the country.

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