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СВИЩОВ

Катедра „Индустриален бизнес
и предприемачество“

СБОРНИК

с доклади от кръгла маса

ИНДУСТРИАЛНИЯТ БИЗНЕС И ПРЕДПРИЕМАЧЕСТВОТО В УСЛОВИЯТА НА ГЛОБАЛНИ ТРАНСФОРМАЦИИ

16 октомври 2026 г.



СТОПАНСКА АКАДЕМИЯ „Д. А. ЦЕНОВ“ – СВИЩОВ

Сборник с доклади от кръгла маса:

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Доц. д-р Искра Пантелеева[1]

Резюме: *В доклада са разгледани кръговите бизнес модели в ролята им на двигател на предприемачески иновации в контекста на глобални трансформации. Акцентът е поставен върху връзката между кръговите бизнес модели и предприемаческите иновации. Очертани са нови бизнес възможности, резултат от дигитализацията, мрежовите екосистеми и предимствата на кръговите подходи.*

Ключови думи: *кръгови бизнес модели, предприемачески иновации, глобални трансформации, дигитални технологии, бизнес възможности.*

JEL: O31, O33, Q01, Q56, L26, M21

ENTREPRENEURIAL INNOVATION THROUGH CIRCULAR MODELS – NEW BUSINESS OPPORTUNITIES IN THE CONTEXT OF GLOBAL TRANSFORMATIONS

Assoc. Prof. Iskra Panteleeva, PhD

Abstract: *The report examines circular business models as a driver of entrepreneurial innovation in the context of global transformations. The focus is on the relationship between circular business models and entrepreneurial innovation. New business opportunities resulting from digitalization, network ecosystems and the advantages of circular approaches are outlined.*

Keywords*: circular business models, entrepreneurial innovations, global transformations, digital technologies, business opportunities.*

JEL: O31, O33, Q01, Q56, L26, M21

1. Introduction

Global transformations related to digitalization, the green economy and changing consumption patterns are forcing businesses to rethink their traditional business practices. In this context, the circular economy, based on closed production systems in which resources are reused and stored in a production and use cycle, allows for the generation of more value over a longer period (Urbinati et al., 2017; Linder & Williander, 2017). This establishes it as a strategic framework that offers an alternative approach to value creation based on

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extending the life cycle of products, closing resource flows and reducing the ecological footprint (Xue et al., 2010, Guo et al., 2017). The circular economy can be a driver for sustainability and, at the same time, be stimulated by creating innovative business models that apply its principles across all value chains (Manninen et al, 2018). Geissdoerfer et al. (2017) view the circular economy as a new paradigm that stimulates innovation and creates conditions for the emergence of new business models based on closed cycles and regenerative practices.

In the context of accelerated global change, circular business models are becoming a key tool for increasing competitiveness, stimulating entrepreneurial innovation and creating new market opportunities. They allow enterprises to adapt to the dynamic environment, reduce their dependence on limited resources and develop sustainable forms of growth.

The aim of the report is to analyse the role of circular business models as a driver of entrepreneurial innovation and to outline the new business opportunities that arise in the context of global transformations and the widespread application of the network approach.

2. Circular business models as a basis for entrepreneurial innovation

Circular business models are economic models that aim to close resource loops through systems for reuse, repair, recycling and regeneration, while stimulating sustainable innovation (Geissdoerfer et al., 2017). For Bocken et al. (2016), they represent strategies for creating value by extending product life cycles, reducing resource consumption and integrating eco-design, modularity, reuse, repair and recycling, which allows the development of innovative products and services with a lower resource footprint. Circular business models replace traditional sales of products with the provision of a service (Product Service System), thus contributing to the optimization of resource use and the reduction of waste (Tukker, 2015). Tukker (2015) emphasizes that servitization (the „product as a service“ model) changes the way entrepreneurs generate value by moving from selling tangible products to providing services, thus opening up new entrepreneurial niches.

Circular business models can also be seen as a specific approach to creating value by transforming waste into resources, using remanufacturing, recycling and new forms of product services (Lacy & Rutqvist, 2015). From a systems perspective, they represent a system that eliminates waste and pollution, keeps products and materials in use and regenerates natural systems (Ellen MacArthur Foundation, 2019). Considering the degree of acceptance of the circular economy when applying the concept of circularity (in offering value to customers and in ways of interacting with suppliers and reorganizing one’s own internal activities), Urbinati et al. (2017) develop circular economy business models based precisely on the degree of acceptance of circularity. By including two new components (take-back system and acceptance factors), Lewandowski (2016) conceptualizes an extended framework for a circular business model,

recognizing the „triple compliance“ challenge as a factor that facilitates the transition to circular business models. Frishammar and Parida (2019) develop a roadmap for circular business model transformation in the form of a step-by-step process for implementing a circular transition, enabling enterprises to achieve environmental, social and financial goals and proactively address sustainability.

Summarizing the different views of the authors, a synthetic definition can be formulated, according to which **circular business models** represent *a strategic approach to creating value by extending the life cycle of products, closing resource flows and minimizing waste, based on practices such as reuse, repair, remanufacturing, recycling and servitization. It integrates eco-design, digital technologies and innovative services, thus stimulating entrepreneurial innovation and sustainable growth in the context of global transformations and network configurations*.

Circular business models (see Table 1) change the traditional production logic and promote the emergence of new business opportunities in the context of global transformations accompanied by digitalization, environmental challenges and changing consumer attitudes. Digital technologies accelerate the implementation of circular models through IoT traceability, digital twins and AI optimization, which improve efficiency, transparency and resource management (Ranta et al., 2021).

Table 1. Circular business models – essence, advantages and sources

Circular Business Model	Essence	Benefits	Source
Reuse	Designing products for easy repair, upgrade, and recycling. Using a product or component more than once without significant rework.	• Reducing costs and waste. • Extending the life cycle.	Bocken et al. (2016)
Repair and Refurbishment	Restoring product functionality.	• Reduce waste. • New services and revenues.	Tukker (2015)
Remanufacturing	Complete disassembly, replacement of parts, and reassembly.	• High resource efficiency. • Reduced production costs.	Lacy & Rutqvist (2015)
Recycling	Recycling materials for new production.	• Closing resource cycles. • Reduced environmental footprint.	Ellen MacArthur Foundation (2019)
Servitization (PSS)	Product offered as a service (Product-as-a-Service).	• Recurring revenues. • Resource optimization.	Tukker (2015)
Modular and Ecodesign	Designing products for easy repair, upgrade, and recycling.	• Reduce costs. • Increased sustainability	Bocken et al. (2016)
Digital Twins	Product life cycle simulation.	• Process optimization. • Reduced defects.	Ranta et al. (2021)
IoT Traceability	Monitoring product condition and usage.	• Predictive maintenance. • Efficient management.	Bressanelli et al. (2018)
AI Optimization	Analysis and optimization of resources through artificial intelligence.	• Automation. • Reduced costs.	Ranta et al. (2021)

Circular business models are becoming a key strategic tool for stimulating entrepreneurial innovation (see Table 2), which provokes the realization of a number of benefits (see Table 3).

Table 2. Circular business models and circular innovations in Entrepreneurial and Industrial Business

Circular business model	Circular innovation – nature and application
Reuse	Extending the life cycle of products by reusing components and materials.
Repair and Refurbishment	Restoring the functionality of products to reduce waste and costs.
Remanufacturing	Full recovery of products through disassembly, replacement and reassembly.
Recycling	Processing of materials to create new products and reduce resource dependence.
Servitization	Moving from selling a product to providing a service (Product as a Service).
Modular and Ecodesign	Designing products for easy repair, upgrade and recycling.
Digital Twins	Simulating the life cycle of products to optimize resources and extend use.
IoT-Based Traceability	Monitoring the condition and use of products for predictive maintenance and reuse.

Source: Based on and adapted from: Bocken et al. (2016), Tukker (2015), Geissdoerfer et al. (2017), Lacy & Rutqvist (2015), Ellen MacArthur Foundation (2019), Pieroni et al. (2021), Ranta et al. (2021), Bressanelli et al. (2018).

Table 3. Matrix: Circular business models based on innovation – Benefits

Circular business model	Benefits		
	Economic	Environmental	Social
Reuse	Reduced raw material costs. Lower production costs.	Reduce waste. Less resource consumption.	Increased product availability. Stimulating local repairs
Repair and Refurbishment	Extended life cycle. New service revenues.	Reduce electronic and industrial waste.	Creating new jobs in service activities.
Remanufacturing	Significant reduction in production costs. High added value.	Reduce emissions and energy consumption.	Upskilling. Developing technical skills.
Recycling	Recovery of materials. Reduced costs for new resources.	Reduce pollution. Close resource loops.	Improving public engagement with sustainability.
Servitization	Recurring revenues. Product-as-a-service models.	Reduce waste through maintenance and optimization.	Better customer service. Increased loyalty.
Modular and Ecodesign	Reduced repair and replacement costs.	Easy recycling. Less material loss.	Increased safety and convenience for consumers.
Digital Twins	Optimization of production. Reduced defects.	Reduce energy consumption through simulations.	Increased transparency and control in production.
IoT Traceability	Reduced costs through predictive maintenance.	More efficient resource management.	Increased safety and quality of work.
AI Optimization	Automation. Reduced operating costs.	Optimal use of materials and energy.	Increased workforce efficiency.
Blockchain for Circular Chains	Reduced costs for control and certification.	Transparency of resource flows.	Increased trust between partners.
Green Business Models	New markets. Competitive advantages.	Reduce ecological footprint.	Creating sustainable communities.

Source: Based on and adapted from: Tukker (2015), Geissdoerfer et al. (2017), Lacy & Rutqvist (2015), Ellen MacArthur Foundation (2019), Pieroni et al. (2021), Ranta et al. (2021), Bressanelli et al. (2018).

Circular business models encourage the development of high-value-added services and support the transformation of business ecosystems. According to Bocken et al. (2016), circular models integrate eco-design and modularity, while Tukker (2015) emphasizes the role of servitization as a driver of sustainable innovation. While Geissdoerfer et al. (2017) consider the circular economy as a new paradigm for business transformation, Ranta et al. (2021) emphasize digital technologies as a catalyst for circular processes that underpin the circular economy.

In the face of strong market competition in a complex, dynamically changing and risky environment, the implementation of circular business models brings a number of positive aspects and provides enterprises that have introduced the principles of the circular economy with a large number of diverse advantages – economic, environmental and social.

3. New business opportunities in the context of global transformations

Global transformations create a favourable environment for the development of circular business models as a basis for new entrepreneurial opportunities (see Table 4), based on a dynamic approach and rethinking the way value is created and distributed, with the emphasis shifting from linear value chains to network ecosystems based on collaboration, resource sharing and digital platforms. Digital technologies (IoT, artificial intelligence, digital twins and platforms)

Table 4. Circular business models and new business opportunities in the context of global transformations

Circular Business Model	Opportunities in the context of global transformations and network approach	Source
Reuse	Platforms for shared use and resale; global online markets for „second hand“ products; networks for shared resources	Bocken et al. (2016)
Repair and Refurbishment	International networks of service centres; platforms for repair services; local and global partnerships for extending the life cycle	Tukker (2015)
Remanufacturing	Global chains for product reverse collection; partnerships between manufacturers and logistics companies; networks for industrial symbiosis	Lacy & Rutqvist (2015)
Recycling	Transnational systems for material collection and processing; platforms for trading in secondary raw materials; networks for resource sharing	Ellen MacArthur Foundation (2019)
Servitization (PSS)	Global platforms „product as a service“; subscription models; networks of suppliers and customers connected through digital platforms	Tukker (2015)
Modular and Ecodesign	Co-design in networks of partners; global chains for modular components; platforms for sharing designs and standards	Bocken et al. (2016)
Digital Twins	Global digital platforms for simulation and monitoring; networks of manufacturers and suppliers sharing life cycle data	Ranta et al. (2021)
IoT Traceability	Networks of connected devices; global traceability and predictive maintenance systems; asset management platforms	Bressanelli et al. (2018)
AI Optimization	Platforms for real-time data analysis; global networks for resource optimization; intelligent systems for circular process management	Ranta et al. (2021)

expand the possibilities for implementing circular models on a global scale, and digital solutions catalyse innovation in business models by enabling traceability, optimization and the creation of networks of partners for sharing data and resources (Ranta et al., 2021).

Bressanelli et al. (2018) highlight the role of digital technologies in integrating circular practices into complex value chains. In this context, the network approach (based on platforms, partnerships and ecosystems) becomes a key mechanism for scaling circular business models and turning them into a source of new entrepreneurial opportunities, including high-value-added services, shared resources and co-creation of innovation.

4. Conclusion

Entrepreneurial innovations based on circular business models are emerging as a key driver of sustainable growth in the face of accelerating global transformations. The circular economy offers a strategic framework that allows businesses to rethink the way they create value – by extending product lifecycles, closing resource flows and integrating digital technologies. This leads to the emergence of new business opportunities based on networked ecosystems, shared resources and collaboration platforms that expand the scope and scale of circular practices. Analysis of leading research shows that circular models not only improve resource efficiency, but also create conditions for the emergence of new services, products and market niches. In the context of global digitalization and green transformation, they become the basis for competitiveness, innovation and sustainable development.

Circular business models are not just an alternative to the linear economy, but a strategic direction for modern enterprises that combines economic logic, technological progress and environmental responsibility. Their integration into business practices is a key condition for successful adaptation to global changes and for creating innovative solutions with high added value.

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