~ МЕНЕДЖМЕНТ ТА БІЗНЕС-АДМІНІСТРУВАННЯ ~

УДК: 334.7:504.06:005.414 **DOI: https://doi.org/10.32680/2409-9260-2025-9-334-73-82**

FEATURES OF USING METHODOLOGICAL APPROACHES TO BUSINESS MODELING OF ECOLOGICALLY-ORIENTED COMPANIES*

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Abstract. *The article investigates the methodological foundations and practical features of business modeling for ecologically-oriented companies. The main purpose of this study is to substantiate and systematize methodological approaches to business modeling of ecologically-oriented companies, ensuring the integration of environmental sustainability principles into the core logic of value creation and distribution. It highlights the need to integrate economic, environmental, and social dimensions within the strategic architecture of sustainable enterprises. The study systematizes existing approaches to business modeling, including the, Business Model Canvas, Lean Canvas and Sustainable Business Model Canvas, emphasizing their adaptability to the goals of sustainable development. A conceptual framework for building eco-oriented business models is proposed, which focuses on value co-creation, stakeholder interaction, and circular resource management. The research results can be applied to improve the competitiveness of enterprises that adhere to environmental responsibility principles, as well as to support policymakers and educational institutions in promoting sustainable entrepreneurship.*
Keywords: *business modeling; sustainability; ecologically-oriented companies; methodological approaches.*

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ОСОБЛИВОСТІ ВИКОРИСТАННЯ МЕТОДИЧНИХ ПІДХОДІВ ДО БІЗНЕС МОДЕЛЮВАННЯ ЕКОЛОГІЧНО-ОРІЄНТОВАНИХ КОМПАНІЙ*

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Анотація. *Екологічно орієнтовані компанії стикаються з необхідністю інтегрувати екологічні, соціальні та управлінські фактори у свої стратегічні та операційні рамки. Головною метою статті є обґрунтування та систематизація методологічних підходів до бізнес-моделювання екологічно орієнтованих компаній, забезпечення інтеграції принципів екологічної стійкості в основну логіку створення та розподілу цінності. Методологічна основа дослідження базується на системному та міждисциплінарному підході, який поєднує економічні, екологічні та управлінські перспективи для дослідження особливостей бізнес-моделювання в екологічно орієнтованих компаніях та зрілих підприємствах. У статті систематизовано існуючі підходи до бізнес-моделювання, включаючи Business Model Canvas, Lean Canvas та Sustainable Business Model Canvas, з акцентом на їхній адаптивності до цілей сталого розвитку. Дослідження визначило кілька ключових результатів: інтеграція принципів сталого розвитку в бізнес-моделювання забезпечує узгодженість корпоративних стратегій з екологічними та соціальними цілями; об`єднані концептуальні рамки забезпечують комплексні структури для побудови та аналізу екологічних бізнес-моделей, підкреслюючи спільне створення цінностей, ефективність використання ресурсів та співпрацю зацікавлених сторін; застосування цих методологічних інструментів сприяє переходу до практик циркулярної економіки, підвищує прозорість звітності про сталий розвиток та сприяє загальній конкурентоспроможності еко-компаній. З теоретичної точки зору, стаття поглиблює розуміння взаємозв`язку між бізнес-моделюванням та сталим розвитком, розширюючи сферу управління еко-інноваціями. Результати можуть бути застосовані підприємцями та освітянами для підтримки формування та масштабування екологічно відповідальних підприємств.*
Ключові слова: *бізнес-моделювання; сталий розвиток; екологічно орієнтовані компанії; методологічні підходи.*

JEL Classification: L200; M210; O210

Statement of the problem. In the context of global environmental challenges and the transition to sustainable development, traditional business models are no longer sufficient to ensure competitiveness and long-term growth. Ecologically-oriented companies face the need to integrate environmental, social, and governance (ESG) factors into their strategic and operational frameworks. However, there is a lack of unified methodological approaches to business modeling that effectively combine economic performance with ecological responsibility. Existing models often fail to capture the complexity of sustainable value creation, resource efficiency, and circular economy principles. Therefore, there is an urgent need to adapt and develop methodological approaches that reflect the specific characteristics, goals, and constraints of ecologically-oriented enterprises.

Analysis of recent research and publications. In recent years, the issue of developing methodological approaches to business modeling for ecologically-oriented companies has become increasingly relevant in the context of the global transition toward sustainable and circular economies [1]. The growing recognition that economic growth must align with environmental and social responsibility has led to an active search for new frameworks that integrate sustainability principles into business strategy and operations.

A third direction is the application of system dynamics and systems thinking for modeling the complex interdependencies among economic, environmental, and social factors [2] highlight that system dynamics modeling provides an opportunity to simulate long-term scenarios, assess policy impacts, and analyze the resilience of business models under uncertainty. This approach enables the identification of potential trade-offs between profitability, environmental outcomes, and social value creation, thus contributing to a more holistic understanding of sustainable business performance.

Another methodological challenge involves the integration of multi-criteria analysis tools capable of balancing the economic, environmental, and social dimensions of sustainability. The need for flexible and adaptive models that can respond to dynamic external conditions - such as policy changes, technological shifts, and environmental risks - remains a pressing issue. Scholars emphasize that future research should focus on developing hybrid approaches that combine elements of business model innovation, life-cycle assessment, digital analytics, and system dynamics modeling [3-7].

Contemporary research demonstrates the emergence of a multi-methodological paradigm for sustainable business modeling, where economic performance and ecological responsibility are treated as complementary objectives. Nevertheless, methodological inconsistency, limited quantitative validation, and insufficient contextual adaptation still constrain the practical application of these models.

Separation of previously unresolved parts of the overall problem. Despite the growing number of studies devoted to sustainable development and the formation of environmentally responsible business models [8-9], a number of important aspects remain insufficiently explored. First, the existing methodological approaches to business modeling are often based on traditional economic paradigms that focus primarily on profit maximization, while ecological and social dimensions of value creation are treated as secondary or supplementary. This creates a methodological gap between the declared principles of sustainable development and their practical implementation in business models of ecologically-oriented companies.

There is a practical challenge related to the adaptation of theoretical models to the specific conditions of emerging markets and small and medium-sized enterprises (SMEs). Many existing frameworks were designed for large corporations with extensive resources, which limits their applicability for smaller ecologically-oriented businesses.

Addressing these issues requires developing a comprehensive methodological framework that aligns the goals of environmental sustainability with economic viability and practical implementation mechanisms to the business modeling process.

The article`s purpose. The main purpose of this study is to substantiate and systematize methodological approaches to business modeling of ecologically-oriented companies, ensuring the integration of environmental sustainability principles into the core logic of value creation and distribution. The research aims to copmape conceptual frameworks that can help to harmonize economic efficiency with ecological and social responsibility under the paradigm of sustainable development.

The methodological foundation of this study is based on a systemic and interdisciplinary approach, which combines economic, ecological, and managerial perspectives to explore the peculiarities of business modeling in ecologically-oriented startups and mature enterprises.

The research process was structured in several interrelated stages:

1. Theoretical and Conceptual Analysis. The purpose was to identify dominant methodological approaches to business modeling - including Business Model Canvas, Lean Canvas and Sustainable Business Model Canvas - and determine their relevance to ecological entrepreneurship.
2. Comparative Analysis of Existing Models. A comparative evaluation of traditional and eco-oriented business models was carried out to identify the main differences in value creation logic, stakeholder engagement, and resource management. This analysis helped to reveal structural components that enhance the sustainability and adaptability of green enterprises.

The integration of these methods allows for a holistic understanding of how methodological approaches can optimize the performance of ecologically-oriented companies, balancing profitability with environmental stewardship and social responsibility.

Basic material. Every startup begins with an idea. However, an idea alone does not guarantee success. It is important to understand how this idea will turn into a real business and bring value to society. This is where business modeling is needed.

Business modeling is the process of describing the logic by which a startup creates value for customers and receives compensation in return. In other words, it is a way to explain: who our customer is, what problem we are solving, how exactly we deliver the solution, and how we make money. For ecological and socially responsible startups, there is also another dimension – what positive change we create for the environment and the community.

The peculiarity of startups is that they operate in conditions of high uncertainty. Markets change rapidly, customer needs evolve, and competitors appear unexpectedly. For ecological solutions, there is an additional challenge – combining innovativeness with responsibility for environmental impact. That is why the business model in a startup is not a static document but a living tool that must be updated regularly.

It is also important to understand that a business model is not only about money. It also covers other aspects: who our partners are, what resources are needed, and which key processes ensure success. In the case of ecological startups, this also includes evaluating how to reduce negative impacts and increase the sustainability of the model.

Thus, business modeling is a basic step on the path of every entrepreneur. It helps turn an idea into an action plan and take the first steps toward creating a sustainable company that benefits the business, customers, and the environment.

Business Model Canvas (BMC) has become one of the most widely used business modeling tools in the world [10-11]. Its main idea is to present a business on a single sheet divided into nine key blocks. This allows one to quickly see how a company creates, delivers, and captures value (fig. 1).

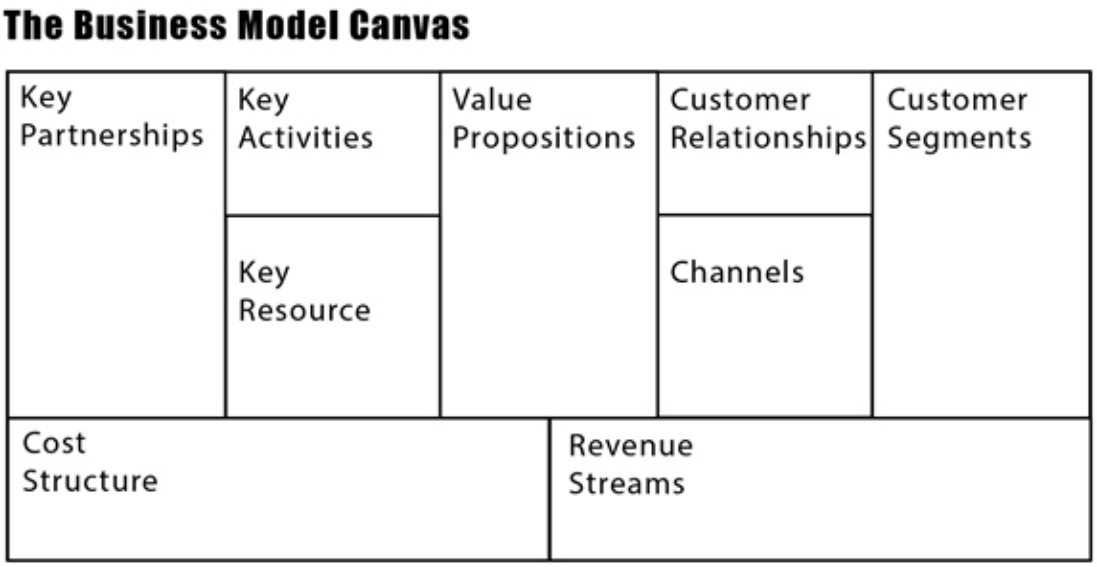

Figure 1. Business Model Canvas
Source: Compiled by the authors based on [11]

This tool is ideally suited for mature companies that already have customers and a clear understanding of their processes. BMC helps improve the existing model, find new opportunities, and communicate strategy within the organization. It can also be useful for startups, but it often requires adaptation, since at early stages customer problems and flexible hypothesis testing are more important.

Lean Canvas [12] was developed as an adaptation of the classical Business Model Canvas, specifically for the needs of startups (fig. 2). Its main difference is the emphasis on rapid testing of ideas, flexibility, and a deep understanding of customer problems.

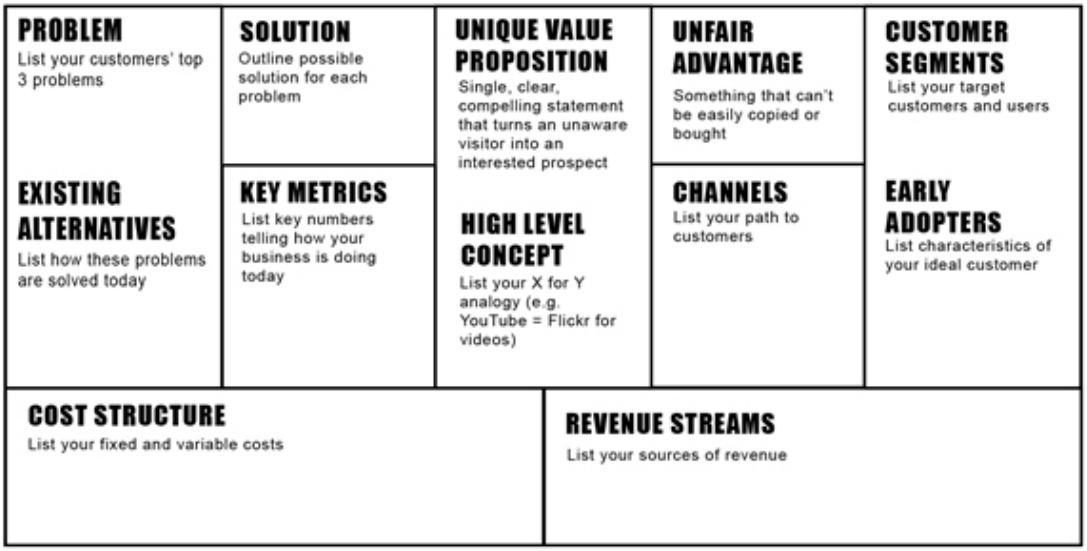

Figure 2. Lean Canvas

Source: Compiled by the authors based on [12]

Lean Canvas is suitable specifically for startups that are still searching for their business model and are operating under high uncertainty. It helps to quickly identify risks, test hypotheses, and understand whether the product truly solves an important problem. Thus, Lean Canvas is a flexible tool that allows teams to move faster and avoid costly mistakes.

Business Model Canvas and Lean Canvas share a common foundation: both tools are designed to visualize a business model on a single page and help quickly assess the viability of an idea. However, their logic differs, and this is especially important for startups, including ecological or socially oriented ones.

In Lean Canvas, the first block is Problem. Here the team must identify the top three key problems that a potential customer experiences. This approach forces startup founders to begin not with the product but with understanding the customer`s pain. For "green" startups this could be, for example, the problem of excessive plastic waste or high household energy consumption. In Business Model Canvas this block is absent: it is more oriented toward a mature market where the key problems are already known.

In Lean Canvas, customer segments are considered more deeply: it is important to distinguish between users and those who actually pay. This is critical for multi-sided platforms. For example, in a waste recycling startup, users may be city residents, while the clients are municipalities or businesses that pay for the service. In Business Model Canvas, customers are described in a more general way.

Lean Canvas includes the Key Metrics block. This means that the team must define how to measure progress: the number of active users, conversion rate, customer acquisition cost (CAC), customer lifetime value (LTV). For ecological startups, metrics may also include "environmental impact" - reduction of CO_2 emissions or the amount of waste. In Business Model Canvas, metrics are not highlighted separately.

Lean Canvas forces the team to think about what makes the startup unique and resilient. This could be a patent, a unique water purification technology, a partnership with a major eco-fund, or the trust of a local community. In Business Model Canvas this block does not exist, which makes

it less suitable for evaluating early ecological projects.

Lean Canvas is a simple yet powerful tool that allows startups to quickly map all the key elements of a business model on a single sheet. Its strength lies in its focus: it forces entrepreneurs to look at the business through the customer`s eyes, concentrate on problems, and test hypotheses. A clear definition of the problem forms the foundation for the next parts of Lean Canvas: customer segments, unique value proposition, and solution. If a mistake is made at this stage, all subsequent steps will be built on false assumptions.

No business can operate "for everyone." One of the most important steps for a startup is to understand who the customers are, or more precisely, for whom value is being created. In Lean Canvas, this is a separate block that forces the team to clearly describe its target audience and distinguish between different groups of users.

A value proposition is the reason why a customer chooses your product and not another. It must answer the key question: "Why should the customer buy from us?". The Unique Value Proposition (UVP) combines an understanding of the customer`s problem and the strengths of your solution, and for ecological or socially oriented startups may also include an emphasis on sustainability, waste reduction, or energy savings.

When the problem, customer segments, and value proposition are defined, the logical next step is to describe the solution. In Lean Canvas, this block is responsible for what product or service you offer to address the customer`s problem. Importantly, at the early stage this is not about a fully developed product – it is enough to define a Minimum Viable Product (MVP), which allows you to quickly test demand. For ecological startups, this can even be a pilot service with minimal infrastructure but with a clear indicator of environmental effect (for example, waste reduction).

The Solution block is directly based on the previous three: Problem – Customer Segments – UVP. It is a kind of practical check: does our product correspond to the declared value and does it really solve specific problems for specific customers, including in terms of sustainability and societal benefit.

Even the best product will not succeed if customers do not learn about it. Therefore, the next step in Lean Canvas is the description of channels - the ways through which the startup communicates with customers and delivers its value.

Channels are closely linked to Customer Segments and UVP. If the value proposition is formulated correctly, channels help convey it to the audience that needs the product most. They also affect the Cost Structure (advertising, commissions) and Revenue Streams (for example, the choice between online and offline sales).

Without clearly defined sources of income, even the most interesting startup will remain just an idea. The Revenue Streams block in Lean Canvas shows how a startup makes money and who actually pays. This is important because the user and the customer do not always coincide.

Revenue Streams are closely connected with Customer Segments (who pays), Channels (where sales take place), and Cost Structure (what resources must be maintained for monetization). Choosing the right model often determines the startup`s success in the market.

No business can operate without costs. For startups, it is especially important to understand which costs are critical at the start and how they affect the business model. Often, it is precisely the wrong assessment of costs that leads to rapid depletion of resources and project closure. For ecological startups, it is also important to account for costs associated with a sustainable approach: eco-certified materials, waste processing, or the use of energy-efficient solutions.

To understand whether a startup is moving in the right direction, measurable data is needed. The Key Metrics block in Lean Canvas shows which indicators best reflect the success of the business model. It is a kind of "compass" that helps make decisions based on facts rather than intuition. For ecological startups, it is also important to include metrics that reflect sustainability and environmental impact.

Metrics show how effective the Channels are. They influence Revenue Streams and Cost Structure by demonstrating whether investments are justified. They also help confirm that the Solution and Value Proposition truly match customer problems. For ecological startups, they also confirm that the business creates a positive effect for the environment and society.

The Unfair Advantage block is one of the most difficult in Lean Canvas, but at the same time one of the most important. It answers the question: "What makes our startup special and impossible to quickly copy or replicate?". This is what creates a competitive edge that can stand the test of time. For ecological and sustainable startups, this may be not only a business factor but also public trust, partnerships with communities, or a unique technology that combines economic benefit with environmental value.

Unfair Advantage strengthens the Value Proposition and Customer Segments. It is what convinces customers to choose you and stay with you. For investors, this block is often decisive: it shows whether a startup has a chance to hold its position even when competitors appear. For ecological solutions, the unfair advantage may lie in the combination of economic value and positive environmental impact - a factor that is hard to copy.

Modern businesses increasingly combine profitability with responsibility. In a world where resources are limited and social justice is becoming a key value, companies are shifting from short-term thinking to sustainable business models - those that balance economic success, social benefit, and environmental care.

Thus, the main difference lies in philosophy: Business Model Canvas describes an already mature business, whereas Lean Canvas helps startups quickly test hypotheses and adapt. The differences between Business Model Canvas and Lean Canvas are shown in the table 1.

Table 1

Business Model Canvas and Lean Canvas: the appropriate ways to use [10-12]

Business Model Canvas	Lean Canvas
- the company is already operating in the market and has customers; - it is necessary to analyze the existing model and identify points for improvement; - strategy needs to be aligned in a large organization; - business expansion to new markets is being planned (for example, a household appliance manufacturer launching a “green” line of energy-efficient products).	- the idea is at an early stage and the business model has not yet been validated; - there is high uncertainty about customers, the problem, or monetization; - the team needs to quickly test hypotheses; - the project is oriented toward innovation, including in the field of sustainable development (for example, a mobile app for waste sorting or a carpooling service).

Source: Compiled by the authors based on [10-12]

A sustainable business is not just a trend. It is a new logic of entrepreneurship in which companies aim not only to make money but also to create long-term value for all stakeholders - customers, employees, partners, communities, and the planet [2].

To understand how to do this, entrepreneurs now have a new tool - the Sustainable Business Model Canvas (SBMC) [3]. It is based on the classical Business Model Canvas, but extends it to 11 blocks (fig.3), adding environmental and social dimensions.

The classical Business Model Canvas focuses on how a company creates, delivers, and captures value. In contrast, the Sustainable Business Model Canvas (SBMC) answers two additional questions:

- What impact does the business have on the environment?
- What benefit does it bring to society?

The SBMC helps entrepreneurs build an integrated business model in which profit, social benefit, and environmental responsibility do not contradict each other.

A sustainable business clearly defines for whom it creates value.

Customer segments may include:

- conscious consumers who prefer “green” products;
- corporate clients implementing ESG approaches;
- local communities or social groups that need inclusive solutions.

In sustainable models, value has a triple dimension: economic benefit for the customer; positive social impact; minimal environmental footprint. Channels in a sustainable business must be transparent, accessible, and eco-friendly. A sustainable business builds trust and participation - the customer becomes a partner, not just a buyer. Forms of engagement include: packaging reuse programs; joint environmental initiatives; transparent communication through ESG reports. The key rule – the source of revenue must not contradict the principles of sustainability. Sustainable resources include not only finance and technology but also: renewable materials; human capital and knowledge; brand trust and social capital.

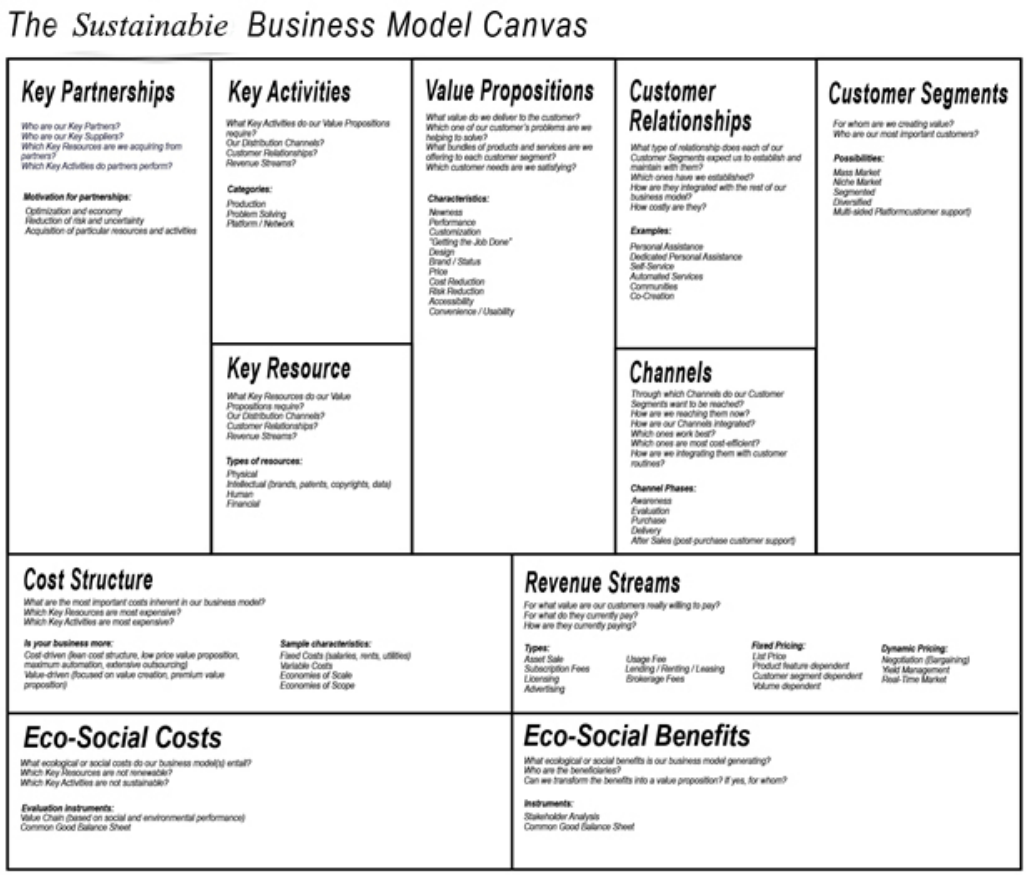

Figure 3. Sustainable Business Model Canvas [13]

Source: Compiled by the authors based on [13]

These are the processes through which the business creates value.

In sustainable models, they should be: energy-efficient; waste-minimizing; inclusive of social innovation. Partners of a sustainable business are co-creators of positive impact, not just suppliers. They may include: environmentally certified producers; local communities; universities and foundations supporting social innovation.

In a sustainable business, part of the budget is allocated to:

- eco-innovation;
- staff training;
- certifications (ISO, ESG, B Corp).

Such expenses are seen as investments that pay back through efficiency, energy savings, and customer loyalty.

This block Environmental Benefits shows how the business reduces its negative impact on nature:

- lowering CO_2 emissions;
- reducing waste and water use;
- switching to renewable energy sources.

For investors, this demonstrates compliance with Green Deal and ESG principles. Sustainable business also has a social mission - to improve people`s quality of life. This may include: creating jobs in local communities; supporting education, healthcare, and inclusion; ensuring fair wages and gender equality.

Thus, the three tools are not competitors but rather complement each other [14-15]. Lean Canvas helps find a viable model, especially for new ecological or social solutions, while Business Model Canvas, Sustainable Business Model Canvas are useful for scaling and systematization in mature companies.

A business model is not just a nice diagram but a practical tool that needs to be regularly checked and updated. Avoiding the mistakes listed above increases the chances of a startup finding its

niche, attracting investors, and becoming a sustainable business that combines economic benefit with positive impact on society and the environment.

The results of the study demonstrate that the effective implementation of methodological approaches to business modeling in ecologically-oriented companies requires a shift from profit-maximization logic to value co-creation and sustainability logic. The analysis confirmed that traditional business models, focused primarily on economic outcomes, fail to capture the long-term ecological and social value generated by green enterprises.

Through a comparative assessment of existing frameworks, three defining features of ecologically-oriented business models were identified:

- Integration of environmental objectives into the value proposition. Eco-oriented companies embed ecological goals-such as waste minimization, renewable energy use, or closed-loop production-directly into their business strategies.
- Circular resource management. Business models based on circular economy principles show higher resource efficiency and reduced ecological footprint compared to linear production systems.
- Stakeholder inclusivity and social orientation. Ecological enterprises tend to engage a broader range of stakeholders, including local communities, NGOs, and consumers, fostering shared responsibility for environmental outcomes.

The study revealed that among the examined frameworks, the Business Model Canvas, Lean Canvas and Sustainable Business Model Canvas approaches are the most suitable for eco-oriented enterprises. These methods allow for simultaneous evaluation of economic, environmental, and social performance.

The study expands the theoretical understanding of business modeling by incorporating environmental and social dimensions as key drivers of business logic. From a practical perspective, the proposed methodological framework provides a flexible tool that can be adapted by enterprises of various sizes and industries.

Conclusions. Developing a business model is a key stage in creating any startup. It is not a formality or a pretty picture for investor presentations. A business model is, above all, a practical tool that helps entrepreneurs understand how their business works today and how it can develop tomorrow in the ecologically oriented way [1-15].

1) The business model as a living tool. The most important thing to remember: a business model is not a static document. It changes together with the startup. At the early stages, the team has only hypotheses: about customers, their problems, and monetization methods. The entrepreneur`s task is to constantly update the model, adding information from experiments, customer interviews, or MVP testing. Ecological startups may start with a simple pilot (e.g., a battery collection service) and later scale up to a national recycling network.

2) Lean Canvas as a tool for testing hypotheses. Lean Canvas is especially valuable for startups because it allows quick hypothesis testing. It is simple, compact, and focused on the essentials: customer problems, value proposition, solutions, channels, and monetization. This approach helps avoid costly mistakes. Instead of spending years developing a product that may turn out to be unnecessary, the team quickly tests ideas, including ecological ones, and gets confirmation of demand.

3) A realistic and clear business model as a key to success.

The success of a startup depends on how well the business model matches reality. Even the best idea will not work without a clear understanding of:

- who the customers are and what they are willing to pay for;
- how to deliver the product to them;
- how exactly the company will make money;
- what costs must be covered;
- what makes this startup special and protects it from being copied.

A well-developed business model allows attracting investors, scaling the product, and building trust in the market. For ecological projects, an additional advantage is that investors increasingly pay attention to sustainability and ESG indicators.

The conducted research has confirmed that ecologically-oriented companies require specific methodological approaches to business modeling that integrate economic efficiency with environmental and social responsibility. Unlike traditional business models, which prioritize short-term profitability, the sustainable business model aims to create long-term, multi-dimensional value that supports both competitiveness and ecological balance.

The study identified several key outcomes:

1. Integration of sustainability principles into business modeling ensures the alignment of corporate strategies with environmental and social goals.
2. The combined conceptual frameworks provide comprehensive structures for building and analyzing ecological business models, emphasizing value co-creation, resource efficiency, and stakeholder collaboration.
3. The application of these methodological tools facilitates the transition to circular economy practices, enhances transparency in sustainability reporting, and contributes to the overall competitiveness of green enterprises.

From a theoretical standpoint, the research deepens the understanding of the intersection between business modeling and sustainable development, expanding the scope of strategic management for eco-innovation. From a practical perspective, the findings can be applied by entrepreneurs, business consultants, policymakers, and educators to support the formation and scaling of environmentally responsible enterprises. Overall, the study contributes to the advancement of methodological tools that promote a systemic transition toward sustainable business ecosystems, fostering innovation, environmental protection, and inclusive economic growth.

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**The article was prepared as part of the project «U!Innovate to accelerate the European path to Climate-Neutral and Smart Cities» with the support of the European Institute of Innovation and Technology (EIT) and the Climate Innovation Agency Climate KIC (250020).*

**Стаття підготовлена в рамках виконання проєкту U!Innovate «Пришвидшення європейського шляху до кліматично нейтральних та розумних міст» при підтримці Європейського інституту Інновацій та технологій (EIT) та агентства з питань кліматичних інновацій Climate KIC (250020).*

Стаття надійшла до редакції 19.09.2025
Прийнята до публікації 26.09.2025
Опубліковано онлайн 14.10.2025