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Scenario #1
ENTREPRENEURSHIP & INNOVATION FOR SUSTAINABILITY

Green Acceleration Methodology for EU Clusters

Introduction

The contemporary world is confronted with major challenges, including environmental issues like climate change driven by human-generated greenhouse gas emissions, and societal issues such as escalating income inequality and various forms of social injustice. **Sustainable entrepreneurship** involves launching and managing businesses that **emphasize and integrate economic growth, environmental care, and social responsibility**. This approach aims to ensure enduring **value and benefits for both present and future generations**.[1]

Businesses are addressing these challenges in different ways. Some are adapting to worsening environmental, economic, and social conditions by managing within these constraints. Others debate the necessity of choosing between environmental and societal benefits versus economic gains. However, addressing ecological and social issues can also open up business opportunities that benefit both the economy and society.[2] This is one of the core philosophies of sustainable business practices and the focus of this textbook.

Sustainable business models, design thinking, and environmental, social, and governance (ESG) factors are interconnected frameworks that enable entrepreneurs and innovators to create value in ways that are environmentally responsible, socially inclusive, and economically sustainable over the long term. By adopting these principles, businesses can drive positive change and contribute to a more sustainable and equitable future.[3]

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[1] Nunes, L.J.R. The Rising Threat of Atmospheric CO2: A Review on the Causes, Impacts, and Mitigation Strategies. Environments 2023. https://doi.org/10.3390/environments10040066

[2] Schley, S., & Laur, J. (2007). The sustainability challenge: Ecological and economic development. *The Systems Thinker*. Retrieved from https://thesystemsthinker.com/the-sustainability-challenge-ecological-and-economic-development

[3] Schaltegger, S., Hansen, E. G., & Lüdeke-Freund, F. (2016). Business Models for

>> SUSTAINABLE BUSINESS MODELS

Sustainable business models are emerging across various sectors as a significant force capable of driving transformative change. The distinctive features of sustainability-oriented companies' business models have become increasingly important. In this context, designing value propositions for sustainable technologies can enhance their appeal. The business model acts as a cornerstone for entrepreneurship and innovation in sustainability by offering a systematic approach to incorporating sustainability into business strategies. This approach drives innovation, attracts investment, meets stakeholder expectations, mitigates risks, and encourages collaboration.[4]

>> CREATIVITY AND DESIGN THINKING

Creativity, design thinking, and entrepreneurship are intrinsically connected. Entrepreneurial design thinking enables the exploration of diverse thought processes and open-ended possibilities to develop practical solutions and establish a presence in the competitive market. Globally, creativity and design thinking are increasingly valued as powerful assets that can significantly impact the success of businesses of all sizes and industries. This material seeks to explore the core principles of design thinking, outline its procedural framework, explain its benefits in a business context, and offer guidance on how to embark on a design thinking journey.[5]

>> ENVIRONMENTAL, SOCIAL, AND GOVERNANCE FACTORS

ESG concepts are extensively utilized to evaluate corporate sustainability. The growing global adoption of ESG practices has demonstrated their effectiveness in assessing business performance. Evidence suggests that ESG disclosure—encompassing environmental impact, economic performance, and social sustainability—can improve both the sustainability and overall performance of businesses[6].

> *"We can't solve the world's problems by using the same kind of thinking we used when we created them."* – Albert Einstein

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Sustainability: Origins, Present Research, and Future Avenues. Organization & Environment, 29(1), 3-10. https://doi.org/10.1177/1086026615599806.

[4] Nosratabadi, S.; et al. Sustainable Business Models: A Review. Sustainability. 2019, 11, 1663. https://doi.org/10.3390/su11061663.

[5] EFMD Global. (2017). *The Entrepreneur's Guide to Building a Successful Business*. Retrieved from https://www.efmdglobal.org/wp-content/uploads/The-Entrepreneurs-Guide-to-Building-a-Successful-Business-2017.pdf.

[6] Alsayegh, M.F., et al. Corporate Economic, Environmental, and Social Sustainability Performance Transformation through ESG Disclosure. Sustainability. 2020, 12, 3910. https://doi.org/10.3390/su12093910.

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green accelerator for EU clusters

Part 1

Learn

1. Sustainable Business Models

Introduction

What is a Sustainable Business Model?

Sustainable business models adopt a comprehensive perspective, recognizing that no company functions independently but rather as part of a broader ecosystem. At a minimum, a business depends on both its supply chain and delivery chain. The sustainable value model illustrates how an organization derives value from this ecosystem. To sustain value creation, the organization must assess its impact on the environment.[7]

Thus, sustainable business models can be understood as holistic approaches. Additionally, these models have progressed to encompass external stakeholders like society and the environment. This shift alters the way value creation is calculated. A company must consider the total impact of its practices on these external stakeholders to accurately determine the net value it generates.[8]

As a result, sustainable business models integrate economic, environmental, and social dimensions of sustainability in defining an organization's purpose. They utilize a triple bottom line approach—people, profit, planet—to assess performance, addressing the needs of all stakeholders instead of prioritizing shareholders alone. They recognize nature as a stakeholder, advocating for environmental stewardship, and adopt both a systemic and firm-level perspective.[9]

A sustainable business model "describes, analyses, manages, and communicates **(i)** a company's sustainable value proposition to all its stakeholders; **(ii)** how it creates and delivers this value; **(iii)** and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organizational boundaries" – **Schaltegger, Hansen, & Lüdeke-Freund, 2016**

[7] Brenner, B. Transformative Sustainable Business Models in the Light of the Digital Imperative—A Global Business Economics Perspective. Sustainability. 2018, 10, 4428. https://doi.org/10.3390/su10124428.
[8] Lüdeke-Freund, F. Sustainable Value Creation Through Business Models: The What, the Who and the How. Journal of Business Models. 2020, 8, 62-90.
[9] Bocken, N. Business Models for Sustainability. Oxford Research Encyclopedia of Environmental Science. 2023, https://doi.org/10.1093/acrefore/9780199389414.013.842.

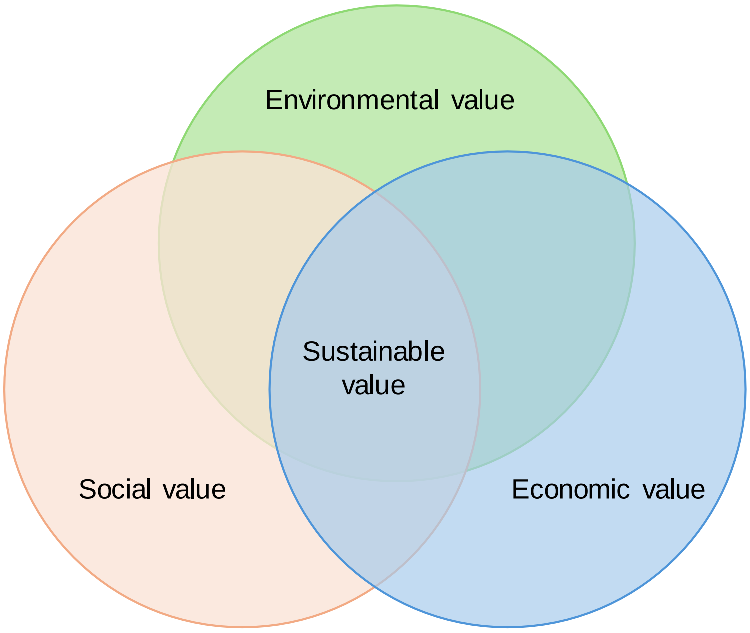

Figure 1. Sustainable Business Model

Currently, there is a gap in the literature that hinders a comprehensive understanding of the diversity among GreenTech business models. Business models are crucial not only for businesses but also for other organizations like non-profits and social enterprises, as they can be vital for survival and gaining a competitive edge.

The concept of business models originated from fields such as e-business, information systems, strategy, and management, gaining prominence in the late 1990s with the rise of the Internet and the rapid increase in technology-focused stock market indices. The advent of the Internet facilitated the creation of new types of businesses, altering traditional business practices. The swift technological advancements prompted an increase in business model research.

It has been suggested that a technology can only achieve real success in business if paired with the appropriate business model, meaning that technology or products alone are no longer sufficient differentiators. For example, "the same idea or technology brought to market through two different business models will produce two different economic outcomes. Thus, it is prudent for companies to develop the capability to innovate their business models.[10]

[10] Trapp, C. T.C., et al. Green entrepreneurship and business models: Deriving green technology business model archetypes, Journal of Cleaner Production. 2021, 297, 126694.

Why sustainable business models are relevant for cluster managers?

Cluster managers play a pivotal role in nurturing the prosperity and competitiveness of business clusters, which comprise interconnected companies, suppliers, and affiliated institutions within a specific industry or area. Understanding sustainable business models holds particular significance for cluster managers due to several reasons:

- Familiarity with sustainable business models fosters innovation in products, services, and processes, thereby enhancing the overall competitiveness of the cluster.

- Implementation of sustainable practices like energy efficiency, waste reduction, and resource optimization can result in substantial cost savings for cluster businesses.

- Investors increasingly favor businesses with robust sustainability practices. Clusters prioritizing sustainability are more likely to attract investment and funding opportunities.

- Proficiency in sustainable business models enables cluster managers to steer businesses towards compliance with present and forthcoming environmental and social regulations, averting penalties and legal entanglements.

- Knowledge of sustainability aids cluster managers in identifying and advocating for collaborative projects beneficial to multiple businesses within the cluster, such as joint waste management or renewable energy initiatives.

By understanding sustainable business models, cluster managers can guide their clusters towards a **more sustainable, competitive, and resilient future, ensuring long-term success and beneficial impacts on the economy, society, and the environment**. They can **reduce risks, save costs, enhance their brand image, and boost employee retention**. However, it is important for cluster managers to recognize that **sustainability is an ongoing process rather than a one-time project**. Achieving long-term success requires commitment, adaptability, and continuous learning. Embracing sustainable business models allows companies to fulfill ecological and social responsibilities while also achieving economic success. Now is the time to develop these models and collectively create a more sustainable future. With innovative approaches and inspiring examples, companies can positively impact the environment and society, making significant contributions to sustainability.

Key concepts

#1 Understanding the concept of business models. Thinking outside the box.

Effective cluster management requires the identification of emerging trends, market gaps, and opportunities for growth. Understanding various business models helps cluster managers assess the feasibility and potential impact of different initiatives and projects within the clusters.

Thinking outside the box enables them to envision new business models and strategies that can contribute to the sustainable development of the cluster and the supported by them companies.

The significance of business models came to the forefront in the late 20th century. Before this shift, companies primarily concentrated on their products. As markets became saturated with similar competing products, corporate leaders had to adjust their perspectives.

The focus shifted to the structure of businesses and the exploration of new channels to reach customers, becoming more crucial than the products themselves.

Some of the well-known concepts that underscores the importance of business models is the **'Blue Ocean Strategy'** and **'Red Ocean Strategy'**. Figure 2 highlights the key differences between these approaches, clearly demonstrating the advanced level of thinking inherent in the Blue Ocean Strategy.[11,12]

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[11] Stanke, B. (n.d.). *Blue Ocean Strategy*. Bob Stanke. Retrieved from https://www.bobstanke.com/blog/blue-ocean-strategy.

[12] Cîmpan, I. Digital Platforms Business Models. Review of International Comparative Management. 2022, 23, 612-629, doi:10.24818/RMCI.2022.5.612.

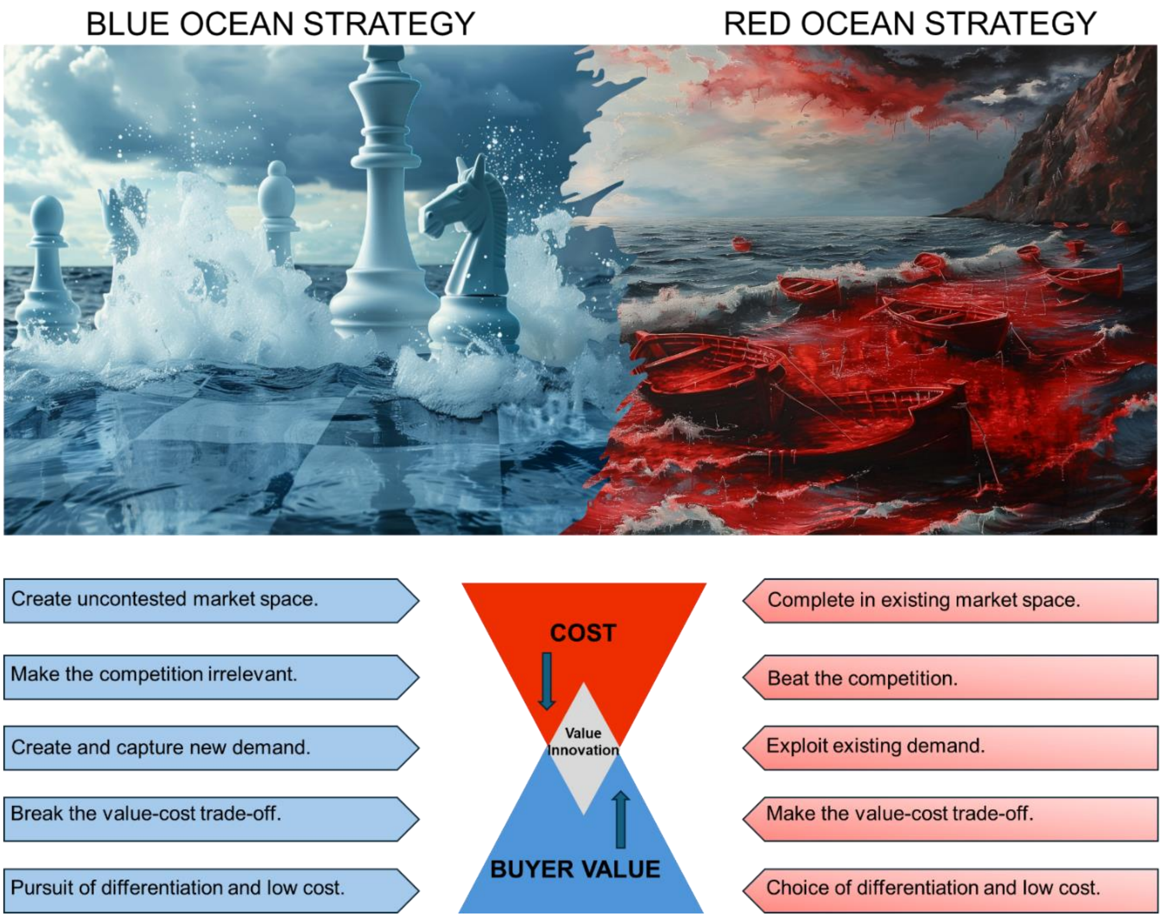

Figure 2. Concepts of Blue Ocean and Red Ocean strategies.

Blue Ocean Strategy, developed by W. Chan Kim and Renée Mauborgne, is a strategic framework that encourages businesses to create new market spaces, referred to as "blue oceans," where competition is minimal or nonexistent. It provides a systematic method for businesses to escape the fierce competition of established markets and discover new avenues for growth and profitability. The core idea of Blue Ocean Strategy is that companies can attain sustainable success by pursuing both differentiation and low cost simultaneously. This method, termed value innovation, aims to deliver a significant increase in value for customers while simultaneously reducing costs.[13]

The strategy focuses on the value innovation concepts:

Value Innovation: Instead of competing within established industry boundaries, businesses focus on creating new value for customers through unique and differentiated products or services. Value innovation happens when companies offer superior value to customers while also lowering

[13] Blue Ocean Strategy. (n.d.). *Value innovation*. Blue Ocean Strategy. https://www.blueoceanstrategy.com/tools/value-innovation/.

costs. This enables them to escape competition and establish a blue ocean market space. Since the value for buyers is derived from the utility of the offering minus its price, and the value for the company comes from the offering's price minus its cost, value innovation is realized only when the entire system of utility, price, and cost is harmonized.[7, 8]

It characterizes traditional companies as players in "**Red Oceans**". Red oceans encompass all existing industries—the known market space. In these red oceans, industry boundaries are defined and accepted, and the competitive rules are well understood. Companies strive to outperform their rivals to capture a larger share of existing demand. As the market becomes increasingly crowded, the opportunities for profits and growth diminish. Products become commodities, and the intensified competition makes the market "bloody," hence the term "red oceans," symbolizing the fierce competition for market share in a saturated environment.[14]

These contrasting scenarios present an opening for a third strategy to emerge, which can develop from the principles of the Blue Ocean approach. Known as the **Green Ocean Strategy**, this approach maintains the characteristics of Blue Ocean while integrating human intellectual resources to drive sustainable and economic innovations, primarily benefiting society, the true market, rather than the conventional market. With knowledge continually circulating within the organization, green innovation facilitated by knowledge democratization can create more intricate, rewarding, cost-efficient, and enduring prospects.

Democratic green innovation leads to the establishment of **Green Oceans**, where sustainability is neither dystopian nor utopian but protopian. It promotes innovation based on knowledge through democratic environments that foster collaborative thinking, resulting in profitable and sustainable advancements. By seizing and redirecting demand towards novel, socially motivated market domains, the **Green Ocean Strategy** empowers companies to convert their proactive initiatives into long-term competitiveness and sustainability. This strategy is realized through intellect-driven, technology-centered social innovations.

Each of the three oceans can be viewed as distinct market domains. Moving from one to another involves an organizational transformation journey facilitated by process canals. These canals establish the infrastructure

[14] FasterCapital. (n.d.). *The concept of blue ocean*. FasterCapital. https://fastercapital.com/topics/the-concept-of-blue-ocean.html.

necessary for such a transition, as well as the organizational maturity required to navigate market challenges and competition effectively. [15]

#2 Elements for a sustainable business model

Drawing from systems theory, viewing sustainability through the lens of resilience offers valuable insights into various organizational structures, as outlined below in Figure 3.

1. **Diversity:** The company requires a wide array of resources, personnel, and investments to enhance its resilience. Relying solely on homogeneous investments can strain resources and managerial focus, potentially increasing risk exposure. Operating with a singular line of business, revenue sources, or homogeneous mindset among employees can heighten vulnerabilities. Companies can no longer afford to adhere strictly to their core activities.

2. **Modularity**: Matrixed organizations are commonly perceived as promoting the exchange of knowledge. Nonetheless, these structures not only demand significant resources but also subject the entire organization to disturbances that propagate throughout. To mitigate these risks, organizations should strive for less interdependence and prioritize modularity, maintaining functional separations to shield themselves from disruptions.

3. **Openness:** Resilient companies must have awareness of events beyond their own borders. They possess the ability to anticipate upcoming challenges and actively monitor the external landscape, envisioning various potential scenarios. They not only prepare to respond to these potential scenarios but also play a role in influencing them. The connection between the organization and the external business and natural environment is crucial, flexible, and adaptable.

[15] Markopoulos, E, et al. Green Ocean Strategy: Democratizing Business Knowledge for Sustainable Growth. T. Ahram et al. (Eds.): IHSED 2019, Springer Nature Switzerland AG. 2020, AISC 1026, pp. 115–125, https://doi.org/10.1007/978-3-030-27928-8_19.

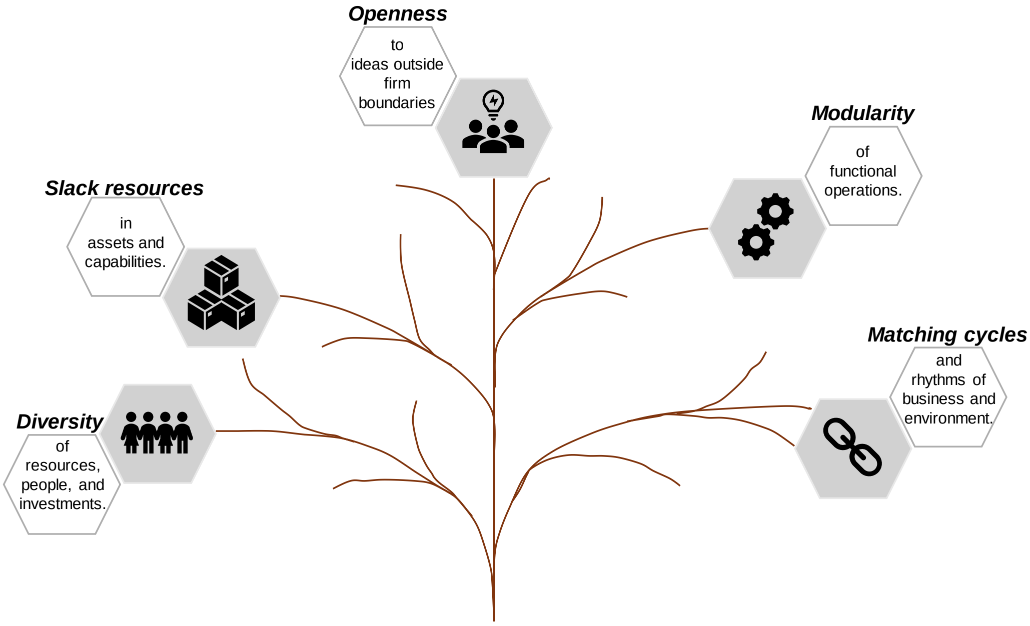

Figure 3. Elements for sustainable business model. Adapted[10]

4. **Slack resources**: In a time characterized by just-in-time production, having excess or spare resources is frequently viewed as expensive and inefficient. However, innovation and adaptation necessitate both financial investments and creative input, as well as the flexibility to pivot. Companies that can weather challenges must allocate additional time to accommodate new concepts, scenarios, and changes in perspective. Slack resources, encompassing both assets and capabilities, are consistently regarded as crucial for shaping a sustainable business model.

5. **Matching cycles**: Companies often focus on maximizing performance and achieving greater efficiency. However, this mindset can lead companies into a cycle where they continually strive to do the same tasks more quickly each day, ultimately encountering limitations on resources. Resilient businesses, on the other hand, consider not constant expansion, but rather the cyclical nature of processes: periods of growth followed by contraction, production cycles, and fluctuations in consumer purchasing behavior. Understanding these patterns in business and the environment enables the company to synchronize with them effectively, avoiding overreactions to what may simply be a natural cycle.[16]

[16] NBS. (n.d.). Five principles of a sustainable business model. NBS.

#3 Sustainable Business Models

As a conceptual model, sustainable business models incorporate **economic, environmental, and social dimensions of sustainability** to define the purpose of an organization. They employ a triple bottom line approach to assess performance, prioritize the needs of all stakeholders over solely satisfying shareholder expectations, consider nature as a stakeholder promoting environmental stewardship, and adopt both a systems and firm-level perspective. Sustainable business models manifest in diverse forms, each emphasizing various facets of sustainability while ensuring economic feasibility. The following examples illustrate the breadth of approaches and creativity in integrating sustainability into business practices:

Sustainable business model canvas

The Sustainable Business Model Canvas aids in transforming an idea into a feasible business model, adopting a comprehensive approach that considers the internal and external relationships of the business. In addition to economic factors, it places emphasis on the ecological and social impacts of the business activities.

Any form of business model canvas serves as a basic visualization tool for understanding how a business model operates. The fundamental principle underlying the development of business model canvases involves breaking down business models into distinct elements.

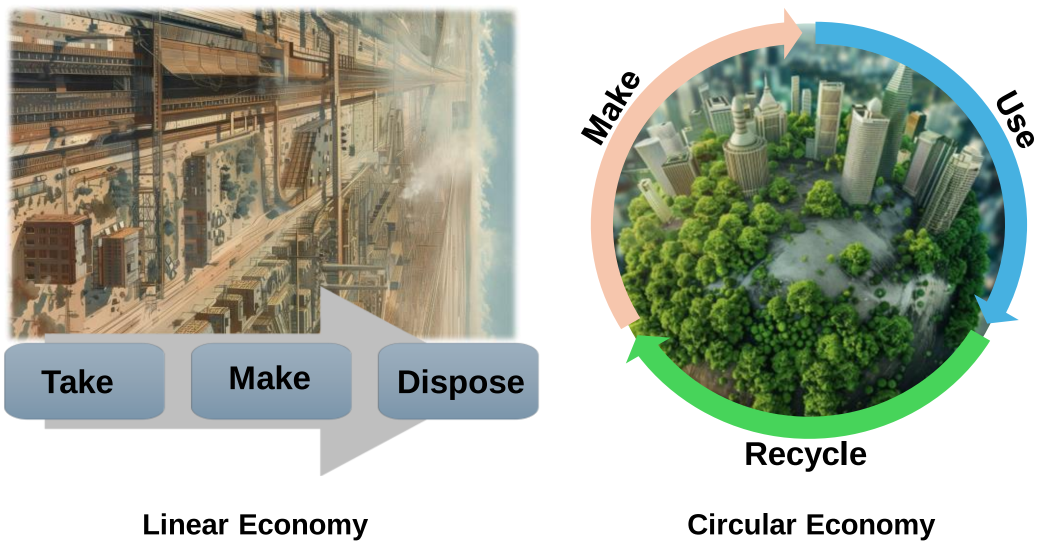

Figure 4. Economy Models.

Since the primary goal of a business model is to generate value and devise methods to deliver that value to customers, the structure of these elements primarily focuses on economic aspects. However, as businesses strive to integrate sustainability into their operations, they should also consider various environmental and social considerations.[17]

Circular Economy Models

A circular economy presents an alternative economic paradigm intended to replace the current linear model of "take-make-dispose". This model emphasizes the efficient use of resources and prioritizes renewable inputs. It aims to maximize the utilization and lifespan of products to extract the highest possible value, while also recovering and repurposing by-products and waste to create new materials or products.

A circular business model is a methodology for designing, producing, delivering, and recuperating products and services with the aim of minimizing waste and optimizing value creation. It revolves around three core principles: "**make**", "**use**", and "**recycle**".

- "**Make**" entails using fewer materials and less energy, thereby avoiding unnecessary consumption.
- "**Use**" involves prolonging the lifespan of products and components and finding alternative uses for them.
- "**Recycle**" encompasses recovering and transforming materials into new products or inputs. This can be accomplished through various strategies, including utilizing renewable and reusable inputs, implementing sharing and rental platforms, extending the lifespan of products, standardizing processes, and recovering resources.

Circular business models offer numerous benefits for both businesses and society. For businesses, they can lead to cost reductions, foster innovation, and enhance customer loyalty. For society, circular business models contribute to job creation, pollution reduction, and resource conservation.[18]

[17] Cardeal, G.; Höse, K.; Ribeiro, I.; Götze, U. Sustainable Business Models–Canvas for Sustainability, Evaluation Method, and Their Application to Additive Manufacturing in Aircraft Maintenance. Sustainability 2020, 12, 9130. https://doi.org/10.3390/su12219130.
[18] Kirchherr, J., et al. Conceptualizing the Circular Economy (Revisited): An Analysis of 221 Definitions, Resources, Conservation and Recycling. 2023, 194, 107001, https://doi.org/10.1016/j.resconrec.2023.107001.

For instance, Product as a Service (PaaS), also known as a product-service system (PSS), represents a circular business model that centres on providing a service or product function rather than the physical product itself. In numerous PaaS models, companies maintain ownership of the tangible asset and lease it to customers who pay a subscription fee based on time or usage.

This approach incentivizes companies to manufacture durable, high-quality products while enabling customers to access the latest offerings without owning them outright. For example, a car manufacturer might offer a car-sharing service, or a company might lease premium-quality appliances while assuming responsibility for their maintenance and eventual recycling.[19]

Green energy and low carbon business models

Companies in this sector concentrate on renewable energy and low-carbon technologies with the aim of mitigating greenhouse gas emissions. This encompasses firms specializing in solar or wind energy, as well as traditional companies making substantial investments to shift their energy sources towards renewables.

They emphasize the adoption of clean, renewable energy generated onsite. ESG consultants possessing expertise in energy efficiency, clean energy technologies, and sustainable construction are aligned with this business model.[20]

While notable examples of companies utilizing this sustainable business model such as Tesla and renewable energy firms, mainstream businesses are also experiencing the advantages of investing in onsite clean energy production. For instance, Staples, Kohls, and Walmart have implemented renewable energy business models to power their operations.

One obvious benefit of this approach is the reduction of risk associated with fluctuating energy prices. However, companies invest in onsite renewable energy for various reasons beyond this. Generating significant revenue can

[19] Robeco. (n.d.). *Product as a service*. Robeco. https://www.robeco.com/en-int/glossary/sustainable-investing/product-as-a-service.

[20] International Renewable Energy Agency. (2017). *Perspectives for the energy transition: Investment needs for a low-carbon energy system*. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Mar/Perspectives_for_the_Energy_Transition_2017.pdf.

occur through onsite renewable energy production, with the option to sell excess electricity to the grid either at a fixed price (guaranteed feed-in tariff) or at market rates. If the installation is off-grid, savings from not purchasing electricity from external sources contribute to improved net income. Additionally, the company may have the opportunity to generate and sell renewable energy certificates or carbon emission reduction certificates, depending on the country's regulations. Another source of income stems from tax incentives.[21]

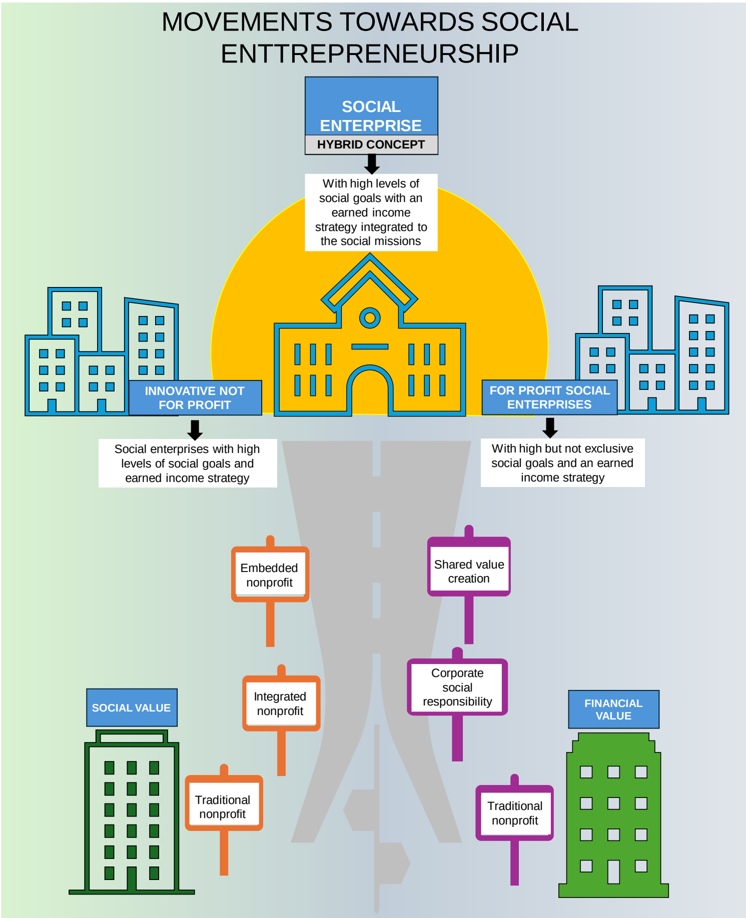

Figure 5. Social enterprise sustainable business model.

Social enterprise sustainable business model

The social enterprise sustainable business model blends profit generation with a central emphasis on tackling social or environmental challenges. Unlike conventional businesses, social enterprises prioritize generating positive social impact alongside ensuring financial stability. These entities

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[21] ESG Consulting Biz. (n.d.). *6 sustainable business models every ESG consultant should know*. https://esgconsultingbiz.com/6-sustainable-business-models-every-esg-consultant-should-know/.

utilize their core activities, products, or services to contribute to social causes, such as addressing poverty, conserving the environment, improving education, enhancing healthcare, or fostering community development. Social enterprises operate across diverse sectors like fair trade, community development, or environmental conservation, channeling a substantial portion of their profits back into their social mission. They adopt various revenue models, including earned income, donations, grants, impact investments, and partnerships. Their success is evaluated not solely based on financial metrics but also on the positive societal or environmental changes they facilitate.[22,23]

Sustainable supply chain business models

Businesses focusing on sustainable sourcing and supply chain practices prioritize ethical sourcing of materials, ensuring fair labor practices across the supply chain, and minimizing the environmental impact of logistics and production processes. This entails reducing the adverse environmental effects of a company's supply chain, encompassing raw material sourcing, transportation, and product disposal. It also involves incorporating eco-friendly methods to decrease carbon emissions and enhance operational efficiency.

This business model holds significant importance for ESG consultants, particularly as large companies with carbon reduction objectives and public commitments, such as achieving Net Zero emissions, can only attain these goals by addressing their scope 3 emissions (those originating from their supply chain).

Implementing this model necessitates ESG consultants collaborating closely with suppliers, many of which are mid-cap and small companies. For global brands, supply chains can be extensive and intricate, with suppliers located worldwide. Consequently, implementing this business model can pose considerable challenges and require substantial resources. Nevertheless,

[22] International Journal of Innovative Research and Technology. (2023). *A review of sustainable business models in emerging economies*. https://ijirt.org/master/publishedpaper/IJIRT157762_PAPER.pdf.
[23] Dvit, C. S. E. (2024, January 15). *The rise of social enterprise business models: Why purpose-driven companies are the future*. Medium. https://csedvit.medium.com/the-rise-of-social-enterprise-business-models-why-purpose-driven-companies-are-the-future-47326f1c9e9f.

companies that successfully implement these practices can substantially reduce their carbon footprint.[24]

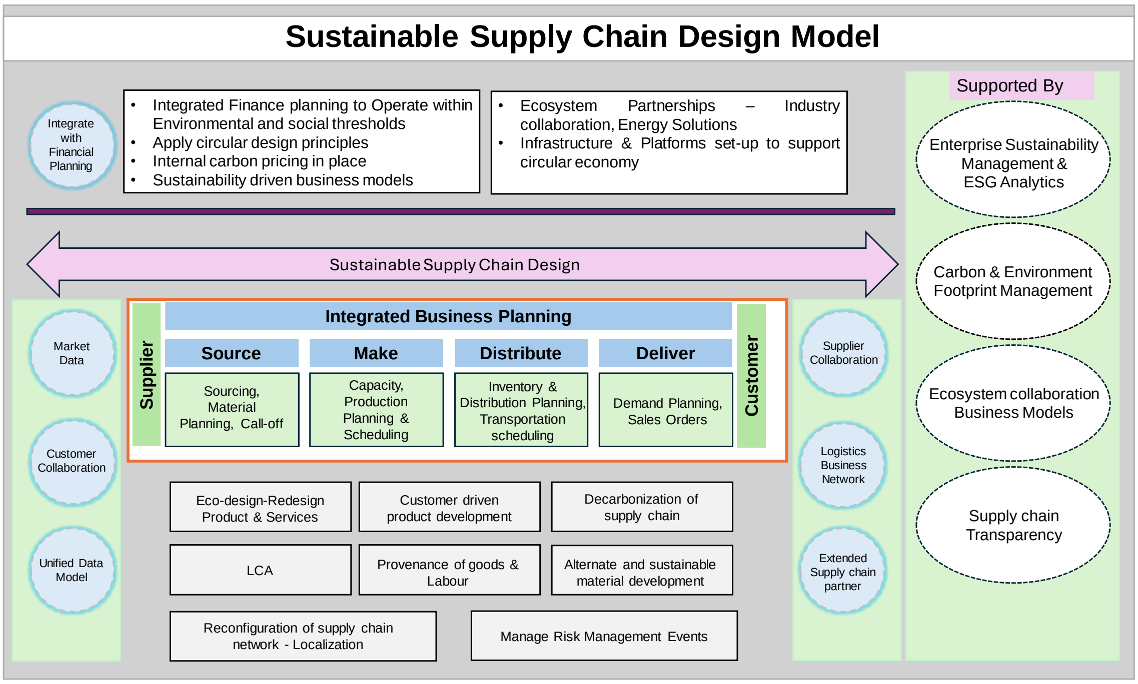

Figure 6. Sustainable supply chain business model.

Regenerative business models

These models are relatively novel compared to other sustainable business models. A regenerative business model goes beyond sustainability by actively restoring, renewing, and/or healing the systems on which we rely, while also enhancing the inherent capacity of these systems to regenerate, renew, and/or heal themselves more effectively. Regenerative models aim to bolster resilience on a scale necessary to safeguard businesses for the future.

An example of a company employing regenerative business models is Dr. Bronner’s, which utilizes regenerative agriculture practices and allocates a portion of its profits to environmental and social initiatives.[15]

As a cluster manager, it is inspiring to collaborate with companies to implement business models that foster genuine and enduring change.

[24] IBM. (n.d.). *Sustainable supply chain management*. IBM. https://www.ibm.com/topics/sustainable-supply-chain-management.

Sharing economy business models

The sharing economy is a phenomenon characterized by the emergence of new business models, often facilitated by technology, that enable access to underutilized goods or services and have the potential to reduce overall consumption. While sharing has long been a practice in society, the term "sharing economy" is used as a broad label encompassing various consumption practices and organizational models, such as sharing, renting, borrowing, lending, bartering, swapping, trading, exchanging, gifting, purchasing second-hand items, and even acquiring new goods. This comprehensive understanding of the term can pose challenges for managers and practitioners, according to research, potentially leading to negative outcomes.[25,26]

The lack of clarity in terminology poses challenges in designing and implementing sharing economy business models. Moreover, it is challenging to assert that the sharing economy, given its diverse practices, unequivocally reduces overall consumption.

Nevertheless, scholars, media, practitioners, and policymakers frequently advocate for the sharing economy as a contributor to more sustainable consumption. It is argued that by facilitating access to goods rather than ownership, the sharing economy can reduce net consumption, thus decreasing net production, enhancing material efficiency, and delivering economic and social advantages.

This approach may lead to reductions in resource usage and greenhouse gas emissions. Conversely, the sharing economy may have adverse effects on sustainability due to negative rebound effects, potentially resulting in increased net consumption and negative social and environmental impacts associated with current sharing practices.[27]

[25] Habibi, M.R., et al. What managers should know about the sharing economy. Bus. Horiz. 2017, 60, 113-121, doi: 10.1016/j.bushor.2016.09.007.
[26] Richardson, L. Performing the sharing economy. Geoforum. 2015, 67, 121-129, doi: 10.1016/j.geoforum.2015.11.004.
[27] Curtis,S. K. and Mont, O. Sharing economy business models for sustainability. Journal of Cleaner Production.2020, 266, 121519, https://doi.org/10.1016/j.jclepro.2020.121519.

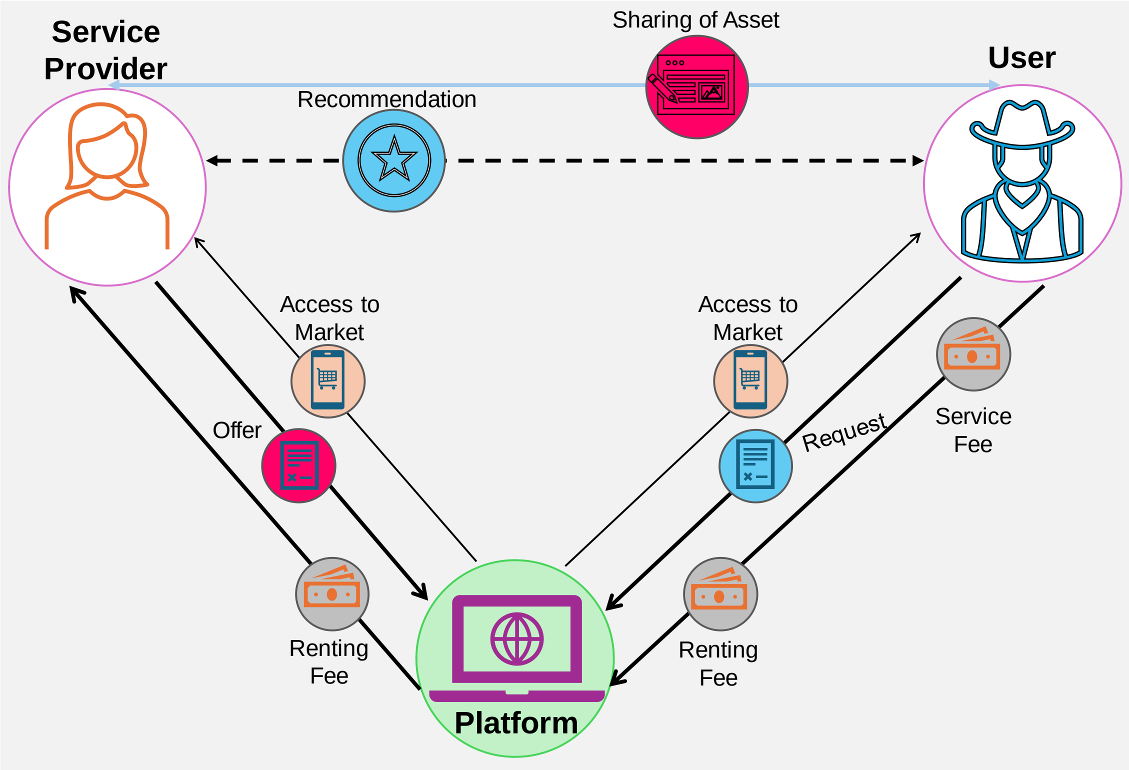

Figure 7. Example of sustainable sharing economy business model.

Impact investing and sustainable finance

There is a growing interest in the finance industry towards business models designed to tackle sustainability issues, leading to the identification of specific models. Financial services firms are directing their focus towards investments that not only yield financial returns but also generate social and environmental impact. This includes initiatives such as green bonds, sustainable investment funds, and microfinance services targeting underserved communities.

On one hand, the financial sector plays a crucial role in sustainable development and in fostering shared value for both businesses and society. On the other hand, stakeholders within the financial industry are exploring new avenues for sustainable value creation, making Business Models for Sustainability highly relevant.

Impact investing is a particularly noteworthy aspect to examine, aimed at achieving tangible social and environmental impacts alongside financial returns. Within impact investing, collaborative models have emerged as mechanisms to address significant social issues that might otherwise go unattended.[28]

#4 Build a Sustainable Business Model

For any company, the cornerstone of success is having a sustainable business model. Lacking this, your business is prone to failure. Creating a sustainable business model entails embedding sustainability into the heart of your business strategy and day-to-day operations. Cluster managers play a pivotal role in fostering economic development and innovation within their regions or sectors. For these reasons, cluster managers who understand how to build sustainable business models can drive economic development, attract investment, foster innovation, meet stakeholder expectations, address environmental and social challenges, and create shared value within their regions or sectors.

! *Keep in mind that moving towards **a sustainable business model is a gradual process that takes time**. It demands continuous dedication and a readiness to adapt. Every advancement made contributes to a more sustainable future for your business and the broader community.*

This journey demands dedication, creativity, and frequently, a transformation in conventional business practices. Below are steps and key considerations to assist you in crafting a sustainable business model for your organization:

Understand and Dedicate Yourself to Sustainability Principles

Begin by comprehending the three pillars of sustainability: environmental protection, social equity, and economic viability. Ensure that the highest levels of leadership are dedicated to integrating sustainability into your company's mission and values.

Take a Long-term Approach

The initial step in developing a sustainable business model is to establish

[28] La Torre, M., et al. Business Models for Sustainable Finance: The Case Study of Social Impact Bonds. Sustainability. 2019, 11, 1887, https://doi.org/10.3390/su11071887.

long-term goals and strategies. Businesses should have a vision extending one, two, and five years into the future to anticipate potential challenges and opportunities. This involves planning where your company will be in five years, allowing for proactive preparation rather than reactive responses to market forces.

As the saying goes, "failing to prepare is preparing to fail." Today, businesses that succeed in the long run are typically those that are proactive rather than reactive, staying ahead of market changes to avoid being caught off guard.

Conduct a Sustainability Audit

Evaluate your current business practices to pinpoint areas for enhancing sustainability. This involves assessing your environmental impact, labor practices, supply chain, and community engagement.

Set Clear and Achievable Sustainability Goals

From your assessment, establish specific, measurable, achievable, relevant, and time-bound (SMART) sustainability goals. These objectives might include reducing carbon emissions and waste, enhancing employee well-being, and increasing community engagement.

Develop a Strategy and Plan

Develop a detailed plan that outlines how you will reach your sustainability goals. Incorporate both short-term actions and a long-term vision. Make sure your plan is flexible and can adapt to changes in the business environment.

Engage Stakeholders

Engage employees, customers, suppliers, and other stakeholders in your sustainability initiatives. Communication and transparency are crucial. Keep stakeholders informed about your sustainability goals and progress.

Innovate and Redesign

Innovate to make your products, services, and processes more sustainable. This might involve redesigning products for greater durability and recyclability, transitioning to renewable energy sources, or adopting more efficient strategies.

Focus on the Supply Chain

Collaborate with suppliers to ensure they adhere to sustainable practices. Take into account the entire lifecycle of your products, from raw materials to disposal.

Implement and Monitor

Put your sustainability initiatives into action and consistently monitor your progress. Utilize metrics and indicators to gauge your adherence to goals. Be ready to adapt your strategy as necessary.

Foster a Sustainable Culture

Promote a culture of sustainability within your organization. Educate and train employees on the significance of sustainability and ways they can contribute. Acknowledge and incentivize sustainable practices among your employees.

Report and Communicate

Consistently report on your sustainability performance, both internally and externally. Utilize sustainability reporting to interact with stakeholders and bolster your company's transparency.

Comply and Go Beyond Compliance

Ensure adherence to all pertinent environmental and social regulations. Strive to surpass minimum standards, positioning your company as a frontrunner in sustainability.

Seek Partnerships and Collaboration

Work together with other businesses, non-profits, and government agencies on sustainability projects. Collaborations can offer fresh perspectives, resources, and a broader impact.[29]

[29] Purple Griffon. (n.d.). *What is a sustainable business model?* Purple Griffon. https://purplegriffon.com/blog/what-is-a-sustainable-business-model.

To go further

Do you want to learn more about Sustainable Business Models?

- *European* Evans, S.; Vladimirova, D.; Holgado, M.; Van Fossen, K.; Yang, M.; Silva, E. & Barlow, C. (2017). Business model innovation for sustainability: Towards a unified perspective for creation of sustainable business models. Business Strategy and the Environment, 26(5), 597-608.

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2. Creativity and Design Thinking

Introduction

What are Creativity and Design Thinking?

Design Thinking is a creative approach.

Design thinking is an approach to creative problem-solving that is widely acknowledged as a valuable method for human-centered product innovation. It has been described as a methodology, a culture, and a philosophy. Fundamentally, design thinking emphasizes that design should fulfill specific purposes and business objectives, not merely focus on aesthetics. This approach originated from the inability of large corporations to generate creative ideas and develop new products and services that meet the unaddressed needs of their customers. At its core, design thinking is centered around the customer and their needs[30].

Design Thinking is a process.

The design thinking process takes into account people's ethnographic background, behaviors, thoughts, motivations, habits, and needs. It involves considering an individual's daily life and their interactions with various products and services throughout the day.[31, 32]

Research show that learners progressing through a design cycle demonstrate higher-order thinking skills compared to those engaged in more traditional learning activities.[25]

Business value of Design Thinking

Businesses constantly strive to achieve numerous goals, such as launching new products that boost sales by appealing to customers and enhancing customer support. When a business decides to develop a new product, a large and costly mechanism kicks into action, particularly in large

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[30] WeWork. (n.d.). *What is design thinking?* WeWork. https://www.wework.com/ideas/professional-development/creativity-culture/what-is-design-thinking.
[31] Gifford, E. (n.d.). *The business value of design thinking*. Toptal. https://www.toptal.com/designers/product-design/design-thinking-business-value
[32] Abosalem, Y. Assessment Techniques and Students' Higher-Order Thinking Skills. Int. J. Second. Educ. 2016, 4, 1-11. doi: 10.11648/j.ijsedu.20160401.11.

corporations, leading to significant expenses. Implementing design thinking can immediately save substantial amounts of money by focusing on the specific solutions that people need, thus realizing immediate cost savings as part of the return on investment (ROI) of design thinking. This approach is versatile and can be equally effective at various scales, whether for an activity, project, course, or program. The design process can be directly explored as a method or applied in the pursuit of other collaborative efforts.

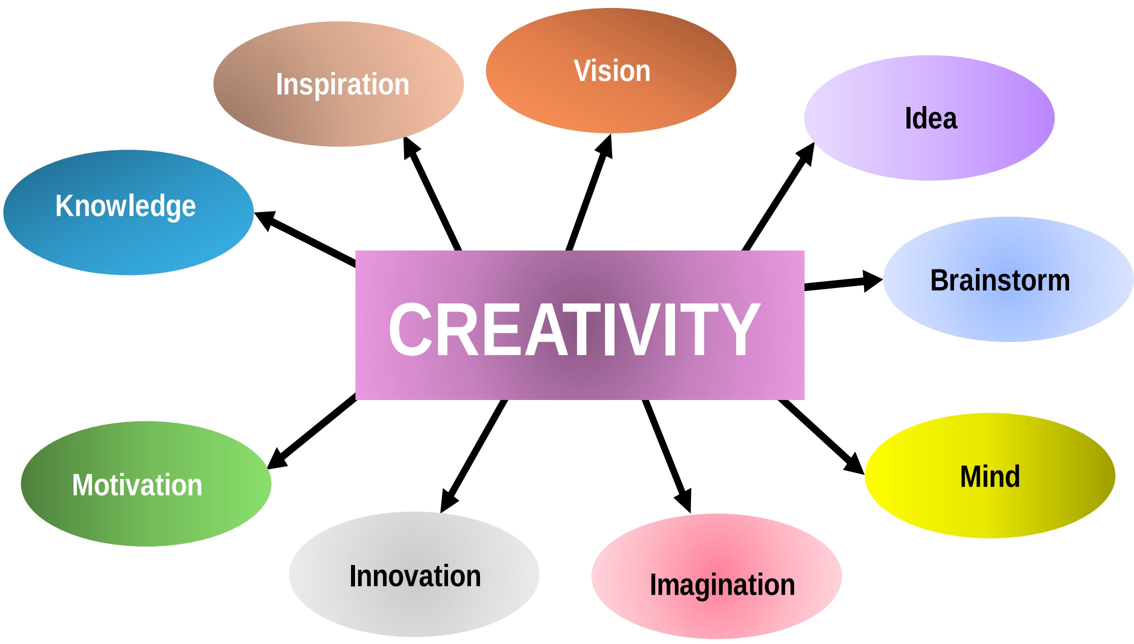

Figure 8. Creativity in Entrepreneurship.

Why is design thinking relevant for cluster managers? The Power of Design Thinking in the Workplace: Creating People-First Spaces for Sustainable Business Impact?

Cluster managers must innovate to thrive and maintain competitiveness in a swiftly evolving landscape. In the realm of Design Thinking, cross-functional teams collaborate to comprehend user needs and devise solutions that cater to those needs. Furthermore, the design thinking process facilitates the discovery of inventive solutions.

The primary value of Design Thinking lies in its provision of a structured innovation process. While trial and error can be useful for testing and experimenting with what works and what doesn't, it often consumes time, resources, and proves ultimately ineffective. Conversely, adhering to the systematic steps of design thinking offers an efficient pathway to generating new, innovative solutions.

In addition to furnishing a clear, structured process conducive to strategic innovation, design thinking can yield immensely positive outcomes for cluster managers in terms of collaboration, progress, and financial resources.

A design thinking mindset exerts a profound influence on every facet of the workplace, taking into account the diverse interconnected elements that shape the overall work experience. The workplace serves as the 'operating system' of any cluster organization and has the potential to engender positive and sustainable business impacts, such as fostering empathy and well-being among personas and enhancing productivity, thereby augmenting employee satisfaction and performance.

Key concepts

#1 What is the Design Thinking process ? Phases of Design Thinking

Design thinking is a powerful method that can greatly enhance entrepreneurship by promoting innovation, addressing complex problems, and creating value. It provides entrepreneurs with the tools and mindset necessary to manage the complexities of starting and growing a business. This approach emphasizes empathy, creativity, collaboration, and iterative learning, all of which are crucial for developing innovative solutions that meet real market needs and drive entrepreneurial success. There are five phases or stages in design thinking to understand the customer's requirements.

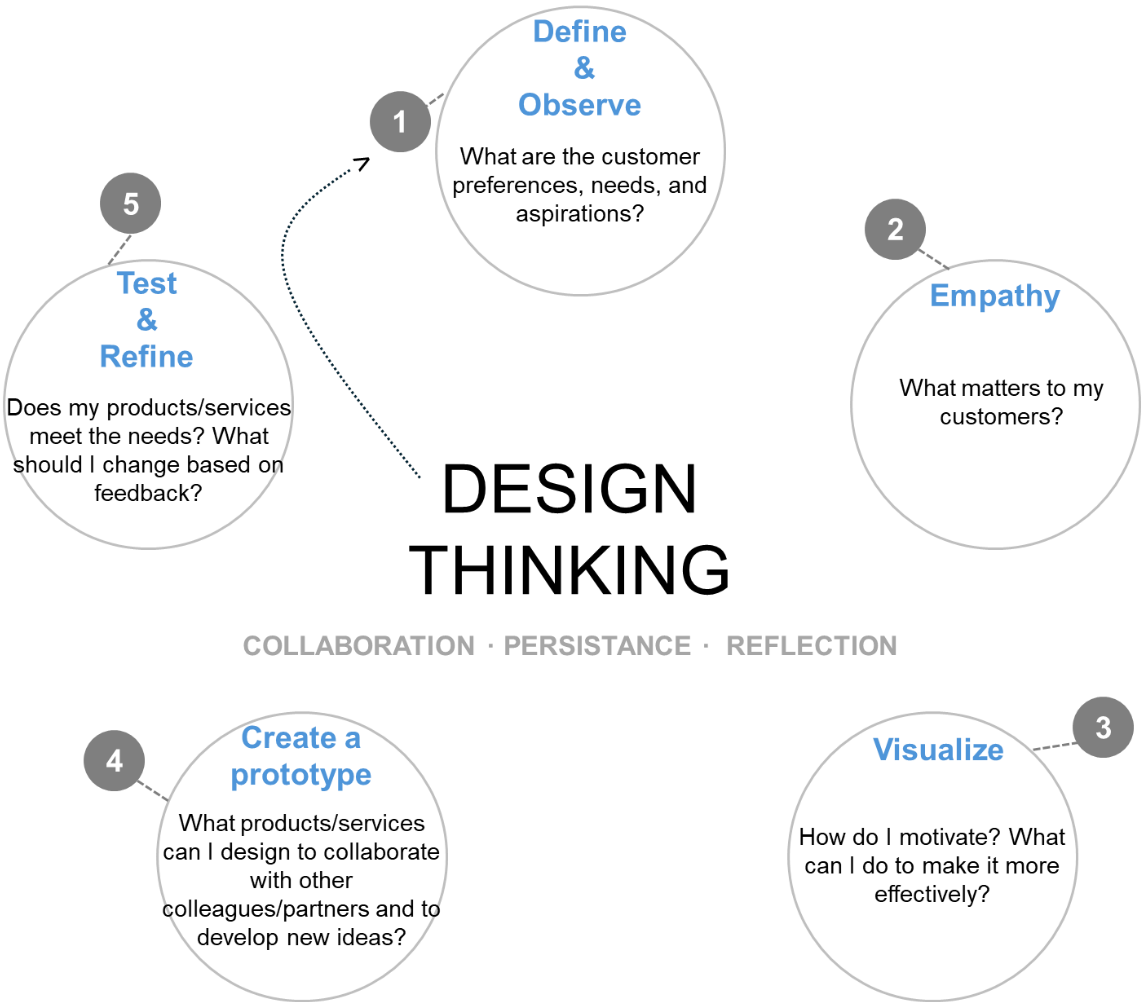

Figure 9. Design Thinking process.

Stage #1: Empathize

The initial step requires setting aside your assumptions and gaining genuine insight into user needs by empathizing with them. In this phase, you need to directly engage with the target audience and observe their behaviors, workflows, and environment. By observing how they operate and experiencing their daily routines, you can gather valuable insights into their challenges, pain points, and needs.

Stage #2: Define

In the define phase, the focus shifts to analyzing the data and observations acquired during the empathize phase, aiming to craft a practical problem statement. Begin by identifying recurring patterns and underlying themes within the gathered information. Through organizing and correlating these insights, you can articulate a problem statement that succinctly encapsulates the core challenge to address. This process involves synthesizing all the insights gleaned during the empathy phase.

The subsequent step entails crafting a clear problem statement, leveraging the insights gathered earlier. It's crucial that this statement is framed around human-centered needs rather than purely business objectives. For instance, rather than aiming for a generic business metric like a 5% increase in signups, the focus should be on addressing the needs of a specific demographic, such as assisting busy moms in providing nutritious meals for their families.

Draw upon the frustrations observed or communicated during the empathize phase to generate relevant questions aimed at devising solutions.

Stage #3: Ideate

The ideate stage involves engaging in brainstorming sessions to generate a diverse array of ideas aimed at tackling the defined problem statement. During this phase, you and your team are encouraged to explore all possibilities without constraints, welcoming even the most unconventional concepts. Following the brainstorming session, sift through the generated ideas, identifying and prioritizing those that are most viable for further exploration and implementation.

Stage #4: Prototype

During the prototype phase of design thinking, the focus is on materializing your concepts into tangible forms. This involves developing physical or digital representations of your ideas that are suitable for testing and refinement.

By creating prototypes, you enable the collection of crucial feedback from users and stakeholders, facilitating a process of learning, iteration, and enhancement of the solutions.

Stage #5: Test

In the ultimate phase, you validate and enhance your prototypes by incorporating real-world feedback and conducting user testing. This pivotal stage enables you to gather insights, pinpoint strengths and weaknesses, and implement essential refinements to your solutions.

By actively engaging users in the testing phase, you guarantee that the eventual product or service resonates with their requirements, inclinations, and anticipations.[33] It's crucial to recognize that the testing phase forms part of an iterative cycle. Just as in the initial Empathize phase, you'll once again engage with your users.

User testing holds significant importance as it provides insights into how your audience will perceive and engage with the ideas presented in your prototype, gauging the desirability of the experience. Unlike usability testing, which focuses on task difficulty, user testing involves allowing users to interact with your prototype, observing their reactions, and gaining insights into whether it effectively addresses their needs.[34]

#2 How does Design Thinking help in business ?

There are some important questions to be answered: **What are the advantages of implementing design thinking in a business?** Design

[33] Apex Global Learning. (n.d.). *How does design thinking help in a business?* Apex Global Learning. https://www.apexgloballearning.com/blog/how-does-design-thinking-help-in-a-business/.

[34] Voltage Control. (n.d.). *5 steps of the design thinking process: A step-by-step guide*. Voltage Control. https://voltagecontrol.com/blog/5-steps-of-the-design-thinking-process-a-step-by-step-guide/.

thinking offers numerous benefits to cluster managers and companies across various sizes and industries. Here are some of the key advantages:

1. Cost savings

Cost reduction stands out as a major advantage of integrating design thinking into business operations. It empowers companies to pinpoint targeted solutions that directly meet the immediate needs of customers. By leveraging insights gleaned from various phases of the design thinking process, organizations can allocate resources more efficiently, preventing wasteful expenditure of time, finances, manpower, and materials on solutions with uncertain outcomes.

Figure 10. Advantages of Design Thinking.

Moreover, design thinking offers the flexibility to experiment with ideas without committing extensive resources to complete product development. This enables companies to evaluate the feasibility of a new product or service before making substantial investments. Through this iterative approach, businesses conserve valuable resources, enhance decision-making processes, and mitigate the risks associated with introducing products or services that may not resonate with their target audience.

2. Increased revenue

Companies that prioritize design have demonstrated remarkable financial performance, surpassing other businesses with a notable 32% surge in revenue and a substantial 56% increase in total returns to shareholders. Design thinking offers a remarkable benefit by contributing to revenue growth within companies.

It fosters a deep understanding of customers and their pain points, enabling businesses to develop products that genuinely cater to their needs. By delivering solutions tailored to address specific customer challenges, businesses can elevate satisfaction levels and foster loyalty, resulting in repeat purchases and revenue upticks.

Furthermore, design thinking underscores the significance of innovation and creativity. By nurturing a culture that encourages experimentation, risk-taking, and unconventional thinking, businesses can conceive groundbreaking products or services that set them apart from competitors. These innovative offerings have the potential to attract new customers, explore fresh market opportunities, and drive revenue growth.

For instance, in 2007, Intuit implemented a policy allowing employees to devote 10% of their working hours to side projects. During this period, some employees began questioning the purchasing policy for TurboTax, particularly the emphasis on selling packages of five software seats, despite most users requiring only one seat.

This internal inquiry led to a significant increase in TurboTax sales, with a remarkable $10 million boost in the first year alone. This example illustrates how design thinking can yield valuable insights and drive impactful changes that positively impact a company's financial performance.

Moreover, design thinking encourages businesses to view challenges as opportunities for growth. By reframing problems as chances to create innovative solutions, businesses can uncover new revenue streams. This shift in mindset enables organizations to identify unmet market needs and develop distinct value propositions that attract customers and drive revenue.

3. Problem-solving

Design thinking empowers businesses to accurately pinpoint problems and acquire crucial insights and data necessary for crafting revenue-generating solutions. Frequently, customers struggle to articulate their needs or may not even recognize the issues they encounter. By closely observing authentic customer behavior, companies can readily identify and define these elusive challenges.

It aids businesses in tackling intricate problems by deconstructing them into tangible elements that can be comprehensively analyzed and resolved. Following problem identification, design thinking stimulates individuals' capacity to think innovatively and facilitates the generation of creative solutions.

Moreover, design thinking is applicable to addressing a wide array of challenges. Whether the goal is to unveil a groundbreaking product poised to dominate the market, streamline the operations of a governmental agency, or mitigate employee turnover, design thinking proves invaluable in driving solutions forward.

4. Creating better products

Design thinking offers a profound understanding of customer behavior, delving into their pain points, daily routines, preferences, and motivations, fostering empathy towards users. Consequently, it enables the creation of products that effectively address their needs while being both appealing and functional.

Furthermore, design thinking places significant emphasis on ideation and brainstorming, prompting teams to generate a diverse array of innovative solutions. This approach fosters the development of distinctive and unique products that stand out in the market.

Additionally, design thinking underscores the importance of prototyping and testing. Through the creation of tangible representations of ideas and the collection of user feedback, businesses can iterate and refine their product designs. This iterative process facilitates the early identification of potential flaws or areas for enhancement, ensuring that the final product aligns with user expectations.

5. Improved customer retention and loyalty

Another significant business advantage of adopting design thinking is its capacity to improve customer retention and cultivate loyalty. How does it achieve this?

Design thinking underscores empathy and a profound comprehension of customer requirements. Through comprehensive research and active listening to customers, companies can uncover insights into their challenges, preferences, and cultural nuances. This understanding empowers businesses to develop products, services, and experiences that effectively address these needs, thereby satisfying and delighting their customers.

Furthermore, design thinking promotes a customer-centric approach across the entire customer journey. By meticulously considering every interaction point, from the initial product inquiry to post-purchase support, businesses can ensure a seamless and enjoyable experience at every stage. Consequently, they can distinguish themselves in the market and foster enduring relationships with their customer base.

6. Team collaboration

Design thinking transcends the boundaries of traditional design roles or industries. It promotes a collaborative mindset and advocates for cross-functional teamwork, regardless of one's specific team or industry. This inclusive approach enables individuals with diverse perspectives to collaborate toward a common goal, potentially generating a variety of innovative solutions for problem-solving and enhancing product or service development.

7. Innovation & competitive advantage

Businesses often find themselves stuck in a cycle of internally generating ideas that only offer slight enhancements to existing products. While incremental improvements have their place, relying solely on them can expose a business to disruption from external sources.

Design thinking serves as a catalyst for breaking free from this pattern by fostering innovation and unconventional thinking. By questioning traditional ideas and assumptions, businesses can surpass incremental changes and pursue transformative solutions that revolutionize how customer needs are met.

Through the adoption of design thinking, businesses also become more adept at recognizing disruptive opportunities and proactively responding to shifting customer demands. This proactive approach enables them to outpace competitors and ultimately achieve a stronger market position.[26]

#3 What are the principles of Design Thinking ?

Design thinking principles revolve around being human-centered, meaning the outcomes are custom-made for the end-user. These outcomes are crafted through a collaborative process involving active engagement and reflection.

Unlike conventional methods that often prioritize technology, features, or budget limitations, design thinking places a strong emphasis on empathizing with users to gain a thorough understanding of their needs, motivations, and obstacles.[35]

The key components of design thinking include**:**

Human Centered

Design thinking acknowledges that optimal solutions arise when designers possess a genuine understanding of the individuals they're designing for. This entails adopting an empathetic viewpoint to immerse oneself in the user's position, comprehend their experiences and viewpoints, and incorporate their requirements into the design process.

Empathy

The initial stage of the design thinking process involves cultivating profound empathy with users. This entails actively listening, observing, and

[35] Bender-Salazar, R. Design thinking as an effective method for problem-setting and needfinding for entrepreneurial teams addressing wicked problems. J Innov Entrep. 2023, 12, 24, https://doi.org/10.1186/s13731-023-00291-2 .

comprehending the emotional needs, motivations, and aspirations of users. By genuinely grasping users' perspectives, designers are better prepared to develop solutions that genuinely address their authentic needs.

Interdisciplinary collaboration

Design thinking promotes interdisciplinary collaboration by assembling individuals with varied skills and viewpoints. Through teamwork, designers, technology specialists, marketers, and other stakeholders can pool their ideas and distinctive perspectives to address problems comprehensively.

Creative Thinking

Design thinking advocates for an open and exploratory method of problem-solving. This entails generating a diverse array of creative and innovative ideas, exploring fresh perspectives, and challenging the limits of traditional thinking. Techniques such as brainstorming, mind mapping, and other creative methodologies are frequently employed to foster innovation.

Iterative

Design thinking follows an iterative method that entails swiftly testing and refining ideas and solutions. Instead of adhering to a linear process, designers are prompted to develop straightforward, tangible prototypes for testing with users, using feedback to enhance and iterate solutions.

The essence of design thinking lies in embracing a human-centered, empathetic, collaborative, creative, and iterative approach to problem-solving, aiming to address challenges effectively and innovatively. By prioritizing user needs and fostering an open and exploratory problem-solving approach, design thinking can yield solutions that are more pertinent, efficient, and innovative.[29]

To go further

Do you want to learn more about Design Thinking?

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- *How To Run a Design Thinking Workshop (2-hour Live Training)*. https://www.youtube.com/watch?v=J64VamE8LdE
- *Sustainable Business Model Innovation using the Business Model Canvas - Michelin Case Study* https://www.youtube.com/watch?v=22-6cfoAy_c
- BYU Design Review. (n.d.). *Design Thinking Part 1: Basic Concepts and Principles*. https://www.designreview.byu.edu/collections/design-thinking-part-1-basic-concepts-and-principles
- *The Sustainable Business Model Canvas, 11 Steps to designing a successful sustainability strategy* https://www.youtube.com/watch?v=gVimMEI2u2w
- *Business Model Canvas Explained with Examples* https://www.youtube.com/watch?v=CakUeC1sCSs
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3. Environmental, social & governance factors

Introduction

What is ESG?

ESG serves as a framework for evaluating a company's conduct and performance across diverse sustainability and ethical matters. It also offers a means to gauge business risks and opportunities within those realms. In financial markets, certain investors employ ESG criteria to assess companies and guide their investment strategies, a methodology referred to as ESG investing.

Although sustainability, ethics, and corporate governance are typically viewed as non-financial performance metrics, an ESG program is designed to foster accountability and establish systems and procedures for managing a company's impact, including its carbon footprint and its treatment of employees, suppliers, and other stakeholders. ESG endeavors also play a role in broader business sustainability endeavors, aiming to position companies for enduring success through responsible corporate governance and business strategies.[36]

Investors, regulators, consumers, and employees are now placing growing pressure on companies to not just manage financial capital well, but also to responsibly handle natural and social capital while having appropriate governance structures in place. This demand has led to the emergence of ESG standards..[37]

- The "**E**" in ESG represents environmental considerations, encompassing a company's environmental impact, such as its carbon emissions, waste management policies, water consumption, and other environmental risks. Investors are showing growing interest in a company's environmental practices, given the increasing urgency of

[36] TechTarget. (2023). *Environmental, Social, and Governance (ESG)*. TechTarget. https://www.techtarget.com/whatis/definition/environmental-social-and-governance-ESG.

[37] Deloitte. (2022). *ESG Explained Part 1: What is ESG?*. Deloitte. https://www2.deloitte.com/hu/en/pages/energy-and-resources/articles/esg-explained-1-what-is-esg.html.

climate change concerns.

- The "**S**" in ESG represents social considerations, which involve a company's influence on its stakeholders, including employees, customers, suppliers, and the broader community. Social factors encompass aspects such as labor practices, human rights, product safety, customer privacy, diversity, and inclusion.

- The "**G**" in ESG represents governance considerations, involving a company's management and supervisory procedures, such as board makeup, executive pay, shareholder entitlements, and anti-corruption protocols. Governance factors are crucial as they ensure that companies are answerable to their stakeholders, operating in an ethical and transparent manner.[38]

Why is it relevant to cluster managers?

The relevance of ESG practices in business — Who cares and why?

A cluster's ESG (Environmental, Social, and Governance) performance holds significant importance for various stakeholders due to several reasons. There is a growing demand for transparency from investors and employees, who seek insight into a company's impact on the surrounding ecosystems. Understanding ESG's role in business operations is fundamental to meeting these expectations.

From the perspective of a cluster manager, ESG issues are crucial because they directly influence operational and financial performance. Effective management of these issues impacts revenue, operational costs, expenses, R&D investments, and more. Proper handling of ESG risks and opportunities shapes long-term financial prospects, resilience, and

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[38] The CSR Universe. (n.d.). *What does the 'S' in ESG mean?* https://thecsruniverse.com/articles/what-does-the-s-in-esg-mean-.

reputation. Key stakeholders base their decisions on how well these issues are managed, decisions that can profoundly affect company performance.

In an era marked by financial uncertainty, ESG performance increasingly correlates with financial outcomes, both positive and negative. Consequently, strong ESG performance can lead to tangible financial benefits such as improved access to investments and lower-interest loans. Conversely, poor or inadequate management of ESG issues may trigger shareholder engagement through various channels like active dialogue, proxy voting, or even divestment.

Furthermore, companies are now scrutinizing the sustainability impacts of their suppliers, highlighting the importance of ESG management throughout the supply chain.

Identifying and managing environmental, social, and governance issues are no longer optional—they are imperative. Thus, clusters benefit from recognizing and addressing their material ESG issues as it generates value for both the cluster and its stakeholders. Enhanced ESG performance can foster a positive image, thereby increasing brand loyalty.

Key concepts

#1 What are the benefits of ESG?

Implementing a proactive ESG strategy aligned with your corporate goals signals to consumers that sustainability holds significant importance within your organization. With a growing focus from social, governmental, and consumer sectors on the broader impact of organizations, there's heightened scrutiny on sustainability efforts and increased accountability for reporting.

A well-crafted ESG strategy not only offers a competitive edge by meeting tender and contractual prerequisites but also showcases a responsible stance toward climate change, stakeholder welfare, and governance standards.

A robust ESG strategy correlates with cost savings through enhanced operational efficiencies to counter escalating operating costs. Improved business performance, driven by a robust ESG strategy, leads to risk reduction through the establishment of robust risk identification and management protocols, facilitating informed planning practices. Furthermore, an ESG strategy can align your organization with ISO 14001 and ISO 50001 requirements, potentially securing external validation from an independent body.

By bolstering risk management processes, a sound ESG strategy alleviates regulatory pressures, empowering organizations to anticipate and comply with forthcoming legislative mandates. Such a strategy lays a strong groundwork for implementing compliant policies and procedures that meet mandatory reporting and legislative standards.

This foundation streamlines the monitoring and management of performance data required for obligations like annual reports, the Energy Savings Opportunity Scheme (ESOS), and Streamlined Energy and Carbon

Reporting (SECR), mitigating the risk of penalties, fines, and reputational harm associated with non-compliance.[39]

#2 Key challenges in developing ESG strategies.

To effectively create and execute their ESG framework, companies should initially identify regulatory requirements within their industry and understand the priorities of stakeholders. Evaluating their current ESG performance will help pinpoint areas needing enhancement, paving the way for SMART objectives.

The ESG data strategy is often imperfect and can be entangled in misinformation and apprehension. Overall, by being aware of the key challenges faced by SMEs in developing ESG strategies, cluster managers can provide valuable support and guidance to help companies overcome obstacles, drive positive change, and enhance their long-term competitiveness and sustainability:

Insufficient resources and expertise: At times, companies face a shortage of skills and knowledge needed to develop and execute an effective ESG strategy. This may include a limited grasp of the ESG framework or a lack of dedicated ESG teams and diverse boards.

Solution: Invest in ESG training, recruit experienced professionals, and appoint diverse board members to ensure successful ESG implementation.

Standardization challenges: The absence of uniform ESG reporting standards can breed mistrust in the company's relationships. Adopting corporate policies adhering to universally recognized standards substantially bolsters the credibility of the ESG initiative.

Solution: Establish and implement standardized ESG reporting systems such as SASB, CSRD, etc.

Short-term and Long-term goals: The necessity of achieving immediate financial results sometimes conflicts with the pursuit of long-term ESG goals. Finding the appropriate equilibrium is vital but can be challenging.

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[39] GEP Environmental. (n.d.). *Environmental, social, and governance (ESG) strategy*. GEP Environmental. https://www.gepenv.co.uk/services/environmental-social-and-governance-esg-strategy.

Solution: Develop a transparent ESG roadmap integrating ESG metrics into performance assessments.[40]

#3 How to create an ESG strategy?

As a cluster manager who supports SMEs, it is essential to be able to create an ESG strategy for several reasons such as enhance the business sustainability, mitigate the risk, protect the long-term viability, and drive the innovation within the cluster. Incorporate various ESG trends, practices, and ideas into your plans. Examples include reducing greenhouse gas emissions, establishing more responsible and sustainable supply chains, implementing climate adaptation measures, and adopting a circular economy model that reuses product components and materials instead of discarding or recycling them.

With these considerations in mind, follow these eight steps to develop and implement an ESG strategy:

1. **Internal and external stakeholders.** Engage with board members and business executives on ESG issues crucial to the company, and consult with other stakeholders—such as employees, institutional investors, customers, suppliers, and community leaders—about the issues important to them.

2. **Assess the materiality of various ESG issues:** Utilize the gathered input to identify which issues are most significant to both the business

[40] IdealsBoard. (n.d.). *How to create an environmental, social, and governance (ESG) plan*. IdealsBoard. https://idealsboard.com/how-to-create-an-environmental-social-and-governance-esg-plan/.

and stakeholders, as well as those of lesser importance to either or both. Prioritize the elements of the ESG strategy accordingly.

3. **Establish a baseline for ESG performance:** Record current performance levels, policies, practices, and statistics related to the ESG factors included in the strategy. This provides a benchmark for future comparisons to assess the progress of ESG initiatives.

4. **Define measurable goals for ESG initiatives:** Set specific objectives and performance targets for the overall ESG strategy and its individual components. These goals may include improvements on key performance indicators or maintaining current performance levels and practices that already meet standards.

5. **Create a deployment roadmap.** Develop a comprehensive implementation plan for the ESG program, including project timelines, milestones, and assigned responsibilities.

6. **Select reporting standards and frameworks:** Numerous ESG reporting options are available to companies, and many businesses utilize multiple frameworks to satisfy various reporting and disclosure requirements. Choosing the appropriate framework or combination of frameworks is essential for developing a successful ESG strategy.

7. **Collect, analyze and report on ESG data.** Once the ESG program is up and running, procedures must be in place to gather and assess data related to the pertinent KPIs, followed by the preparation of reports for stakeholders. While comprehensive reports are typically conducted annually, internal progress updates for the board and senior management occur more frequently.

8. **Review and adjust the strategy as necessary:** ESG demands may shift as business priorities, stakeholder interests, and regulatory obligations develop. It's essential to periodically reassess the ESG strategy to ensure its continued effectiveness and to pinpoint any necessary updates, including areas that require optimization.

ESG audits and materiality assessments

The second step mentioned above is formally termed as an ESG materiality assessment. Such evaluations apply the financial accounting principle of materiality to ESG issues and extend it to what's referred to as double materiality. This encompasses evaluating not only the significance or importance of different ESG factors to a company's business operations but also their significance to various stakeholder groups.

Integrating this materiality data furnishes a blueprint for ESG strategies, often visualized through a materiality matrix. This matrix arranges different ESG issues on a grid based on their importance to the business and stakeholders, thereby illustrating the issues in terms of least to most significant.

Apart from aiding companies in prioritizing ESG initiatives, materiality assessments can assist in building a business case for initiatives and determining which performance metrics to monitor. However, for accuracy, an assessment should commence with a thorough stakeholder engagement process to gather information on relevant ESG issues, as well as associated risks, opportunities, and objectives.

At a later stage in an ESG program, ESG audits become another critical step. These audits involve internal or third-party reviews to confirm the accuracy of ESG data, performance metrics, and reports, ensuring compliance with established standards. This process is commonly known as ESG assurance, which can take two forms: limited assurance, involving less rigorous scrutiny and verification by the auditor, and higher-level reasonable assurance, where the auditor affirms that the ESG information is materially correct.

An ESG audit bears similarities to a financial audit. Hence, recommended practices for preparing for an audit include implementing suitable controls on ESG data collection and reporting, establishing board oversight of the reported information, and conducting an audit readiness assessment beforehand.[41] If you would like to find out more, please get in touch from the additional content below.

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[41] Rouse, M. (2023, January 20). [ESG strategy and management: Complete guide for businesses](). TechTarget.

To go further

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Part 2

In practice

Learn from others

How is digitalization for the green transition applied in practice? Have a look at the following stories compiled under the ENDURANCE project, which provide concrete examples of SMES and cluster practitioners who have already incorporated digitalization into their sustainability strategies.

endurance-accelerator.eu/video-toolkit

endurance
green accelerator for EU clusters

Part 3

Get equipped

Get equipped

In this section we introduce you to specific tools and canvas that can support you taking approaches in entrepreneurship and innovation for sustainability. These tools can be used individually as a way to create sustainable business models, design thinking, and ESG standards and regulations.

Tool 1: Sustainable Business model canvas

Tool 2: Sustainability SWOT Analysis

Tool 3: Value Mapping

Tool 4: User Personas

Tool 5: Empathy Cards

Tool 6: ESG Risks and CSRD Compliance

Tool 7: Climate-related Financial Disclosures

Tool 8: Carbon Disclosure Project (CDP)

Tool 9: Sustainability Accounting Standards Board (SASB)

Take aways

This module highlights that merging entrepreneurship with sustainable innovation enables clusters to generate economic, environmental, and social benefits, fostering growth and resilience in a rapidly evolving global landscape. Clusters that emphasize these elements are likely to draw in more businesses, talented professionals, and investments, thereby strengthening their reputation and attractiveness to global partners.

Sustainable innovation boosts productivity, market access, and competitiveness for SMEs by developing eco-friendly products and processes, resulting in cost reductions and an enhanced brand image.

Adopting sustainable practices opens new market opportunities, especially as the demand for green products rises, and provides access to financial resources, such as green financing and government incentives.

As environmental regulations become stricter, sustainable innovation helps clusters stay compliant, reducing risks of legal penalties and ensuring long-term viability.

Integrating entrepreneurship with sustainability makes clusters more attractive, more resilient to uncertainties, and better positioned to seize new opportunities across European ecosystems.

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