

Navigating the Intersection of Business, Sustainability, and Technology

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Introduction

In an era of rapid digital transformation, businesses face significant challenges in staying competitive while adopting sustainable practices. Modern technologies, ranging from artificial intelligence (AI) and blockchain to renewable energy, offer innovative solutions and open new opportunities for enhancing business performance while reducing environmental impact. The book *Navigating the Intersection of Business, Sustainability and Technology* seeks to answer critical questions about how companies can leverage these technologies in the face of global sustainability challenges. As the business world is increasingly driven by technological innovation, a critical question arises: How can companies ensure sustainable growth without harming the environment? This book attempts to provide answers by offering insights into technology's role in transforming how businesses operate toward a greener future. It highlights various industrial sectors, especially in the Middle East, particularly Lebanon, which face specific challenges in integrating green technology into business operations. The main question is how digital transformation can achieve excellent health, education, energy and fashion sustainability.

Hani El-Chaarani, Ibtihaj El Dandachi, Sam El Nemar and Zouhour EL Abiad edited the book *Navigating the Intersection of Business, Sustainability and Technology*. Hani El-Chaarani is an associate professor at the Faculty of Business Administration, Beirut Arab University, Lebanon. He also leads the International Business and Economic Research Academy (IBERA). He has published around 70 scholarly works in international journals and conferences. He is a reviewer and editorial board member for several journals. His research interests include financial behavior, corporate governance, the performance of small and medium-sized enterprises (SMEs), blockchain and extensive data management. Ibtihaj El Dandachi is a PhD student and a researcher at the University of Nicosia, Cyprus. Her research focuses on using disruptive technologies in education and educational change management in schools and universities. Sam El Nemar is an associate professor at the Faculty of Business, AZM University. He has published over 30 scholarly works in journals, books and conferences. He actively conducts peer-reviewed journals and books. He has been awarded various accolades, such as the Emerald Insight Award for paper writing and review. His research interests include consumer behavior, strategic marketing, entrepreneurship, the



performance of small and medium-sized enterprises (SMEs), blockchain and extensive data management. Zouhour El Abiad is a researcher at ESA-École Supérieure Des Affaires. She is the author of more than 20 publications, primarily in family business, corporate finance and behavior. Collectively, these editors bring significant academic and practical expertise on the intersection between business, sustainability and technology, aiding companies and institutions in facing modern challenges while advancing sustainability goals.

The book contributes to research and practice in technology and sustainability by providing a framework for companies and policymakers on how technology can be applied to achieve sustainability goals. It adds insights into the emerging research field on how technology can significantly drive business sustainability, especially in regions facing economic and infrastructure challenges. Its contribution is also relevant to broader research on the application of technology in businesses aiming to reduce global environmental impact while maintaining economic growth.

Thesis

The main argument of the book *Navigating the Intersection of Business, Sustainability and Technology* is that emerging technologies, such as AI, blockchain and renewable energy, can drive business growth while strengthening sustainability efforts. The book highlights the transformative power of technology in enabling businesses to achieve long-term sustainability while remaining competitive in the constantly changing global market. Through case studies and real-world applications, the authors argue that technology is a crucial driver in business process reengineering, which can enhance efficiency, customer satisfaction and organizational sustainability.

One of the main strengths of this book is its comprehensive approach to integrating sustainability into business practices through technology. The editors successfully balance theoretical discussion and practical application, making this book highly valuable for academics and business practitioners. Another strength of the book is the diversity of sectors explored, ranging from education and healthcare to sustainable fashion. This broad coverage demonstrates that sustainability and technology integration principles can be applied across various industries. This makes the book relevant to a broad audience, from policymakers to business leaders.

However, the book also has several weaknesses. Although it covers a variety of industries and case studies, there is a greater emphasis on large companies or sectors with sufficient resources to adopt advanced technology. This focus on large companies creates a gap in understanding how SMEs can overcome barriers to adopting green technology. Additionally, the solutions presented are general. The unique political, economic and social challenges businesses face in different regions are only occasionally discussed in depth when adopting sustainable practices through technology.

Overall, the book's strength lies in its interdisciplinary approach and exploration of how technology can support business sustainability. Its weaknesses include a need for more focus on small and medium-sized enterprises and generalizations associated with regional challenges.

Summary of the primary argument(s)

The book "Navigating the Intersection of Business, Sustainability, and Technology" offers an in-depth analysis of how modern technology can significantly transform business sustainability. The author argues that businesses can tackle global sustainability challenges while maintaining competitiveness by leveraging technologies such as AI, blockchain, renewable energy and the internet of things. This book connects the concept of sustainability

with technology in the context of various sectors, such as energy, fashion, education and health.

The book's main thesis is that technology can provide solutions for enhancing business efficiency while supporting environmental and social sustainability. The author argues that technology is not just a tool but can also drive innovation in how businesses operate and manage their resources. This statement is supported by real-world examples from the energy industry, particularly Saudi Aramco, which uses advanced technology to reduce its carbon footprint and improve energy efficiency. Several important arguments discussed in the book include the following:

(1) Technology as a Driver of Sustainability

This book highlights the crucial role of technology in supporting sustainability. Modern technologies, such as AI and data analytics, enable companies to optimize their operations more energy and resource-efficiently. A concrete example mentioned is the use of AI-based energy management systems in the hospitality industry, which can reduce energy consumption by up to 30%. These technologies reduce environmental impact and enhance company profitability by lowering long-term operational costs. In addition, innovations such as solar power technology and waste management are integrated into business models to support sustainable practices.

(2) Impact on Specific Sectors

Each sector discussed in this book faces different challenges and opportunities in adopting technology for sustainability. In the energy sector, for example, implementing renewable energy such as solar power is crucial to reducing dependence on fossil fuels. AI-based learning technologies help create more personalized and resource-efficient educational experiences in the education sector. The healthcare sector shows how telemedicine technology can improve access to healthcare services while reducing the carbon footprint through patient transportation reduction. Meanwhile, the author discusses how sustainable technology can support a more environmentally friendly product lifecycle in the fashion sector, such as using recycled materials and low-carbon manufacturing processes.

(3) Regional Diversity

The book also highlights differences in adopting green technologies across various regions, focusing on the challenges in developing countries. In the Middle East, particularly in Lebanon, the author explains that infrastructure limitations and regulations often pose significant barriers to green technology implementation. However, the book highlights the opportunities from government policies, such as incentives for renewable energy adoption through the NEEREA program in Lebanon, which allows businesses to obtain subsidized loans for renewable energy projects. In other regions, such as Western Europe, the author notes that the adoption rate of green technology is higher due to stricter regulations and greater environmental awareness among consumers.

(4) The Role of Management and Leadership in Sustainability

The author asserts that the success of integrating technology and sustainability into business heavily depends on management commitment. Sustainability-oriented leadership is required to drive organizational culture change and ensure that

sustainability is not just a policy but is implemented in the company's daily operations. This includes employee training, internal process changes and forming special teams to oversee sustainability initiatives.

(5) Economic Opportunities from Sustainability

This book also emphasizes that sustainability is not just a social or environmental obligation but also an economic opportunity. Companies that successfully integrate sustainability into their business strategies can enjoy various benefits, such as long-term cost savings, enhanced brand reputation and higher competitiveness in an increasingly environmentally conscious market. Examples from the hospitality and fashion sectors show businesses can reduce energy costs and attract more environmentally conscious consumers.

(6) Challenges of Implementing Green Technology

Besides discussing opportunities, this book critically highlights the challenges companies often face in adopting green technology. These challenges include the high initial costs of investing in environmentally friendly technology, regulatory uncertainty in various regions and the need to support infrastructure. These challenges are particularly relevant in developing countries, where resources and government support for sustainability initiatives still need to be improved.

(7) The Importance of Collaboration Between the Public and Private Sectors

The author also underlines the importance of collaboration between the public and private sectors to achieve sustainability goals. Governments can play a crucial role by providing incentives, issuing supportive regulations and supplying the necessary infrastructure. Meanwhile, the private sector can contribute to technological innovation and implement sustainable business models. According to the book, such collaboration is essential for achieving significant transformation toward a greener economy.

The main argument of this book is aligned with the global trend emphasizing the importance of technology in facilitating sustainability. However, what sets this book apart from similar works is its focus on the Middle East region, specifically Lebanon, and how the social, political and economic context in this region influences the adoption of green technologies. Compared to literature centered on developed countries, this book provides a deeper perspective on the challenges developing countries face in integrating technology and sustainability. The book is divided into several sections that systematically explore each industry sector. Each chapter offers case study examples that enrich the discussion on how technology can be specifically applied. For example, the Saudi Aramco case study provides a concrete example of how technology can reduce carbon emissions on a large scale while increasing production efficiency. This evidence provides a solid basis for the claim that technology can be crucial in achieving sustainability.

The mixed-methods approach, including qualitative and quantitative analysis, offers a comprehensive view of how technology affects sustainability across various sectors and regions. For instance, interviews with company leaders and analysis of survey data are used to explore the challenges of technology adoption in developing countries. This provides a deeper perspective on the barriers and opportunities in regions like Lebanon.

The material covered in this book is quite broad, encompassing various industries, including the energy, health, education and sustainable fashion sectors. This demonstrates that green technology has broad applications and can be adapted to various industry contexts. Academically, the book contributes to the literature on technology and sustainability by

introducing the unique challenges in the Middle East region, especially Lebanon, which is rarely discussed in other literature. The book also contributes significantly by showing how technology can help companies in developing regions face global environmental challenges.

Evaluation/analysis

This evaluation section becomes the focus point of the book review “Navigating the Intersection of Business, Sustainability, and Technology.” It highlights how the book successfully addresses the challenges between sustainability and technology within the context of global business while also identifying its weaknesses from an academic perspective.

One of the greatest strengths of this book is its comprehensive and multidisciplinary approach, which connects sustainability theory with the practical application of technology in real-world contexts. The chapters discussing the application of technology in the energy and health sectors, as illustrated by the Saudi Aramco case study, offer concrete evidence of how advanced technology can help companies improve efficiency while reducing environmental impacts. For instance, implementing AI algorithms at Saudi Aramco functions to reduce carbon emissions and optimize energy use, making technology a strategic tool in achieving business sustainability. The book’s success in connecting case studies with business and sustainability theory demonstrates its methodological strength, providing readers with rich insights into the transformative potential of technology. Additionally, the book offers new perspectives on how sustainability does not need to be at odds with profitability but can go hand in hand with technological innovation.

Although the book successfully demonstrates how large companies can leverage technology to drive sustainability, one area that needs improvement is the need to expand the discussion related to SMEs and provide more practical examples of how they can overcome obstacles in adopting green technology, complete with tailored strategies to help SMEs navigate financial and technical challenges that often pose significant barriers in sustainable technology implementation. Thus, the book can become a more relevant and inclusive reference source for large and small business segments. The book could also benefit from a deeper discussion on local and regional policies affecting technology adoption in developing countries. For example, the chapter discussing the education sector has room to explore further how government policies and institutional support can accelerate or hinder technology adoption in schools or universities in developing countries. A more contextual focus would deepen the analysis and provide a more realistic picture of the challenges faced by various industries in different regions.

One of the methodological strengths of this book is the use of empirical case studies, which provide tangible examples of how technology has been applied to achieve sustainability. For example, the application of blockchain in improving supply chain transparency in the energy sector provides a strong argument about the potential of technology to improve business practices. However, despite the importance of this empirical evidence, there needs to be better consistency in the methods used throughout the book. Some chapters offer in-depth analysis, while others, like those discussing the education sector, are more general and need more detailed operational specifics about how technology can be realistically implemented. This inconsistency in the use of evidence could be a weakness, especially for readers looking for a more detailed and systematic discussion on technology implementation in specific sectors.

Conclusion

In conclusion, Navigating the Intersection of Business, Sustainability and Technology provides valuable insights into how technology can facilitate sustainability in the business

sector. This book presents a strong argument for the importance of technology as a primary driver in addressing sustainability challenges, particularly in industries such as energy, healthcare, education and fashion.

The most significant contribution of this book lies in how the authors link sustainability theory to technology-based business practices. The book emphasizes that technology can not only enhance the efficiency and profitability of businesses but also serve as a tool to reduce negative environmental impacts. This contribution is highly relevant in modern business, where companies face significant pressure to reduce their carbon footprint while maintaining competitiveness. The book also introduces case studies reflecting unique challenges in the Middle East region, specifically Lebanon. Thus, the book enriches the green business literature previously dominated by research in developed countries. In many ways, the book opens new insights into how companies in developing regions can adopt green technologies in response to the global environmental crisis.

The book has several limitations, notably its excessive focus on large corporations like Saudi Aramco, while SMEs, which are also crucial to developing countries' economies, should be discussed more. SMEs need help adopting green technologies, such as limited resources and infrastructure, which need more attention. Additionally, the book needs more exploration of the social, political and economic contexts affecting local adoption of green technologies. Going forward, research could focus more on how SMEs overcome these barriers through public-private partnerships or subsidies. Research on the influence of local policies and technology adoption in the public sector, such as education and healthcare, must also be enhanced.

The book contributes to the discussion on the role of technology in sustainability, especially related to global challenges like climate change. It shows how technology can assist various sectors like energy, health, education and fashion to achieve sustainability. Its focus on the Middle East provides a more diverse perspective. It complements the literature on developed countries and demonstrates how technology can be applied in regions with complex economic and political challenges.

The book is helpful for various audiences. Academics can use it to understand the relationship between technology and sustainability. At the same time, business practitioners in the energy, healthcare, education and fashion sectors can gain practical insights from the case studies presented. Policymakers, especially in developing countries, can use this book to guide policies on adopting green technologies in the private sector. The book is also relevant for investors interested in companies committed to sustainability through technological innovation.

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