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Book Review: Harnessing Data for Improved Productivity: Managing the Full Lifecycle of Data

Sun Dan, Shen Yushi, and Zhao Yong (2023).
Harnessing Data for Improved Productivity: Managing the Full Lifecycle of Data.
Toronto: University of Toronto Press.

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ABSTRACT

This review critically examines Harnessing Data for Improved Productivity: Managing the Full Lifecycle of Data by Sun Dan, Shen Yushi, and Zhao Yong. The book presents data as a fundamental production factor in the digital economy and provides a comprehensive overview of data lifecycle management, from creation to value realization. It integrates conceptual explanations with practical applications across multiple industries, highlighting the strategic role of data in driving productivity and digital transformation. While the work offers valuable insights for practitioners and policymakers, its largely descriptive approach and limited theoretical depth may reduce its appeal for academic audiences. Overall, the book serves as a useful and accessible resource for understanding data-driven innovation.

Keywords: data lifecycle; digital economy; big data; data governance; productivity.

INTRODUCTION

In the contemporary digital economy, data has become a critical driver of productivity, innovation, and competitive advantage across industries. Organizations increasingly recognize data as a strategic resource, positioning it alongside traditional factors of production such as labor and capital. The rapid expansion of digital technologies, including artificial intelligence, cloud computing, and the Internet of Things, has further intensified the importance of effective data management. As a result, understanding how data can be systematically organized, analyzed, and leveraged has become essential for both practitioners and researchers seeking to navigate the

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complexities of digital transformation and data-driven decision-making in modern economic environments.

Harnessing Data for Improved Productivity: Managing the Full Lifecycle of Data by Sun Dan, Shen Yushi, and Zhao Yong offers a comprehensive examination of data as a production factor, with a particular emphasis on lifecycle management. The book aims to bridge the gap between theoretical understanding and practical application by guiding readers through the stages of data creation, processing, storage, and value realization. By integrating conceptual explanations with real-world examples across multiple industries, the authors highlight the strategic importance of data in enhancing organizational performance and supporting broader digital transformation initiatives in both public and private sectors.

This review critically evaluates the book's structure, key contributions, and practical relevance, with particular attention to its conceptual clarity, analytical depth, and applicability to contemporary organizational contexts. The analysis focuses on how effectively the book presents data lifecycle management as a coherent framework and examines its applicability to contemporary organizational challenges. The review is structured to first outline the book's main themes and organization, followed by an assessment of its strengths and weaknesses, and concludes with a discussion of its implications for research and practice in the field of digital transformation and data-driven innovation.

Despite the growing body of literature on big data and digital transformation, there remains a need for integrative works that connect conceptual foundations with practical applications across industries. In this regard, the book under review provides a timely contribution by offering a comprehensive perspective on data lifecycle management and its strategic implications. Unlike many existing works that focus either on technical dimensions or high-level strategic discussions, this book attempts to integrate both perspectives through a lifecycle-based approach, offering a more comprehensive view of data management.

OVERVIEW AND STRUCTURE

The book is structured into nine chapters, progressing in a systematic manner from foundational concepts to applied insights. The opening chapters establish a conceptual understanding of data by examining its origins, types, and the evolution of the data ecosystem. These sections provide readers with a necessary theoretical grounding before moving into more applied discussions. The later chapters shift focus toward practical dimensions, including data lifecycle management, enterprise-level challenges, governance priorities, and emerging application domains. This logical sequencing allows readers to gradually build their understanding, making the content accessible while maintaining conceptual clarity. As a result, the book effectively balances introductory explanations with more advanced discussions relevant to contemporary digital transformation contexts.

A notable strength of the book lies in its coherent organizational design, particularly its use of the data lifecycle as a unifying framework. By structuring the discussion around stages such as data collection, storage, processing, analysis, and utilization, the authors provide a consistent lens

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through which readers can understand the role of data in organizational settings. This lifecycle perspective not only enhances the internal consistency of the book but also aligns closely with current industry practices and academic discussions on data management. The clear progression across chapters contributes to readability and ensures that complex topics are introduced in a structured and comprehensible manner, making the book suitable for both practitioners and non-specialist readers.

Overall, the progression from theoretical foundations to practical applications is well-executed, reflecting a deliberate attempt to bridge the gap between conceptual understanding and real-world implementation. The structure supports the authors' objective of demonstrating how data can function as a strategic asset within modern organizations. However, while the organization is effective in guiding the reader, certain sections could benefit from deeper integration of theoretical frameworks to strengthen analytical depth. Despite this limitation, the book's structured approach enhances its usability and reinforces its value as a comprehensive resource for understanding data lifecycle management and its implications for digital transformation.

KEY CONTRIBUTIONS

One of the primary contributions of the book is its comprehensive positioning of data as a fundamental production factor within the digital economy. The authors effectively move beyond viewing data as a passive byproduct of digital processes and instead present it as a strategic asset capable of driving productivity, innovation, and competitive advantage. This perspective is particularly relevant in contemporary organizational contexts, where data-driven decision-making increasingly shapes business models and operational strategies. By framing data within an economic and managerial context, the book contributes to a broader understanding of how digital transformation is reshaping traditional notions of value creation and resource utilization across industries.

Another significant contribution lies in the book's clear articulation of data lifecycle management as a structured and continuous process. The authors provide a detailed explanation of key stages, including data collection, storage, processing, analysis, and utilization, offering readers a systematic framework for understanding how data can be effectively managed. This lifecycle perspective enhances the practical relevance of the book, as it aligns closely with current industry practices and organizational needs. By emphasizing the importance of integrating these stages, the book highlights how organizations can improve efficiency, ensure data quality, and extract meaningful value from increasingly complex and large-scale datasets.

The book also contributes through its integration of real-world applications and industry examples, which illustrate how data-driven approaches can be implemented across various sectors, including retail, finance, agriculture, and smart city development. These examples enhance the accessibility of the content and demonstrate the tangible impact of data on organizational performance and societal outcomes. By linking conceptual discussions with practical scenarios, the authors provide readers with insights into how theoretical principles can be translated into actionable strategies.

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This approach strengthens the book's relevance for practitioners and policymakers seeking to leverage data for innovation and economic development.
Finally, the book offers valuable insights into the challenges and priorities associated with enterprise data management, including issues related to data governance, integration, and value extraction. By identifying these challenges, the authors contribute to ongoing discussions on how organizations can effectively navigate the complexities of managing large-scale data systems. Although the analysis remains largely descriptive, the identification of these key issues provides a useful foundation for further research and practical exploration. As such, the book contributes to both academic and practitioner-oriented conversations on the strategic management of data in the digital economy.

CRITICAL EVALUATION

Despite its strengths, the book exhibits a number of limitations that should be acknowledged. One of the most notable concerns is its predominantly descriptive orientation, with limited engagement in established theoretical frameworks commonly used in academic research. While the authors provide a broad and accessible overview of data and its applications, the discussion lacks deeper conceptual grounding in theories such as the resource-based view or dynamic capabilities. As a result, the book may be less appealing to academic audiences seeking rigorous theoretical development and analytical depth. This limitation reduces its contribution to scholarly discourse, particularly in fields that emphasize theory-driven research.
A further limitation lies in the book's strong policy-oriented perspective, which is particularly evident in its treatment of the digital economy and data governance. While this perspective offers valuable insights into national strategies and large-scale digital initiatives, it occasionally shifts the tone from critical analysis to normative or advocacy-based discussion. This emphasis may limit the book's ability to provide a balanced and globally comparative perspective, as certain arguments are presented without sufficient critical examination. Consequently, readers may find that some sections prioritize promotional narratives over analytical rigor, which can affect the objectivity of the overall evaluation.
In addition, the book demonstrates a limited use of empirical evidence and methodological analysis. Although numerous examples are presented to illustrate the practical applications of data, these cases are largely anecdotal and are not supported by systematic empirical validation. The absence of quantitative analysis, comparative studies, or methodological transparency reduces the robustness of the arguments presented. Incorporating empirical research or structured case analysis would have strengthened the credibility of the findings and enhanced the book's value for both academic and practitioner audiences seeking evidence-based insights.
Finally, while the breadth of topics covered is one of the book's strengths, it also introduces certain challenges related to depth and focus. The wide range of themes, including data lifecycle management, digital transformation, and industry applications, sometimes results in a relatively surface-level treatment of complex issues such as data ethics, privacy, and governance frameworks. A more focused or in-depth exploration of these critical areas would have enhanced

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the analytical richness of the book. Nevertheless, despite these limitations, the work remains a valuable introductory resource that provides a broad overview of the evolving role of data in the digital economy. This breadth, while beneficial in scope, comes at the expense of deeper analytical exploration.

RELEVANCE AND IMPLICATIONS

The book holds significant relevance for practitioners, policymakers, and organizations engaged in digital transformation initiatives. By emphasizing the strategic role of data as a production factor, it offers useful practical insights into how data can be leveraged to improve operational efficiency, support decision-making, and enhance competitive advantage. The practical orientation of the book, combined with its use of real-world examples, makes it particularly useful for managers and professionals seeking to implement data-driven strategies within their organizations. In this regard, the book serves as a valuable guide for navigating the complexities associated with data lifecycle management and for aligning data practices with broader organizational objectives.
From an academic perspective, the book contributes to ongoing discussions on the role of data in shaping modern economic systems and organizational capabilities. Although its theoretical engagement is limited, the concepts and frameworks presented can serve as a foundation for further research, particularly in areas related to digital transformation, data governance, and innovation management. Researchers may find the book useful as a starting point for developing more rigorous, theory-driven investigations into how data functions as a strategic resource. Additionally, the identification of key challenges, such as data integration and value extraction, highlights important avenues for future empirical and conceptual research.
The book also carries broader implications for policy and societal development, particularly in the context of the expanding digital economy. Its discussion of data governance, infrastructure, and national strategies underscores the importance of coordinated efforts to harness the value of data at both organizational and societal levels. Policymakers may benefit from the insights provided regarding the role of data in economic growth and industrial transformation. However, the emphasis on specific regional perspectives suggests that further comparative analysis would be beneficial for understanding global variations in data-driven development. Overall, the book reinforces the importance of adopting a strategic and integrated approach to data management to fully realize its potential in driving innovation and sustainable growth.

CONCLUSION

Harnessing Data for Improved Productivity: Managing the Full Lifecycle of Data provides a timely and accessible overview of the growing importance of data in the digital economy. By presenting data as a strategic production factor and emphasizing lifecycle management, the book successfully highlights the role of data in driving organizational performance and digital transformation. Its clear structure and practical orientation make it particularly valuable for

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practitioners and policymakers. However, the largely descriptive approach and limited engagement with theoretical and empirical research reduce its contribution to academic scholarship. Despite these limitations, the book remains a useful resource for understanding the fundamentals of data-driven innovation and offers a solid foundation for future research and practical application in the field.

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