

CHAPTER 3 MODERN MANAGEMENT TECHNOLOGIES

Strategic Management Based on the Digitalization of the Construction Sector Considering the Interrelation Between the Real Estate Market and Financial Leasing

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Citation:

Denysenko, M., Breus, S., Levchenko, O., Balymov, O., Prytula, Y., & Panchenko, O. (2025). Strategic Management Based on the Digitalization of the Construction Sector Considering the Interrelation Between the Real Estate Market and Financial Leasing. *Economics, Finance and Management Review*, 4(24), 62–71.

<https://doi.org/10.36690/2674-5208-2025-4-62-71>

Received: November 08, 2025

Approved: December 29, 2025

Published: December 30, 2025



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Abstract. The article examines the key aspects of strategic management in the construction sector under conditions of digital transformation, emphasizing the relevance of a comprehensive approach that considers the interrelation between the real estate market and financial leasing. Proposals for the implementation of digital development strategies are formulated, systemic barriers are outlined, and the impact of digital technologies on the dynamics of key indicators is visualized. A mechanism for interaction between stakeholders in construction, finance, and leasing activities is proposed. The aim of the study is to justify the role of strategic management based on digitalization, taking into account the influence of financial leasing on the development of the real estate market. The object of the study is the process of interaction between economic entities in the construction, financial, and leasing sectors under conditions of digitalization. The methodological foundation of the study is based on the dialectical approach, systems analysis, economic and statistical methods, comparative analysis, and the structural-functional approach. In the context of the digital transformation of the economy, strategic management in the construction sector requires a rethinking of existing approaches, with due regard to the relationship between the real estate market and financial leasing mechanisms. The integration of digital technologies at all stages of investment and construction project implementation – from design to operation – necessitates the use of innovative management tools that enhance efficiency, transparency, and investment attractiveness in the construction industry. As a result, mechanisms of interaction between digital platforms, leasing instruments, and developers are substantiated, which reduce investment barriers, improve operational transparency, and accelerate project implementation. It is established that the introduction of Building Information Modeling (BIM), smart contracts, digital platforms, and management systems allows for the optimization of financial leasing processes, improvement in communication among market participants, and enhancement of managerial decision-making quality. The practical value of the results lies in identifying strategic directions for the digital development of the construction sector, which contribute to improved housing accessibility, increased investment volumes, and more effective responses to changing real estate market demand.

Keywords: construction sector, digitalization, strategic management, real estate market, financial leasing, Building Information Modeling (BIM), artificial intelligence, Internet of Things (IoT), digital platforms, investment attractiveness, drones.

JEL Classification: A10, A11, A19, E22, G11, G17, G19, O10, O30, O40
Formulas: 0; **fig.:** 1; **tabl.:** 2; **bibl.:** 22

Introduction. In the current conditions, strategic management in the construction sector is impossible without taking into account the trends of digitalization, which permeate all stages of the implementation of investment and construction projects – from the design stage to the operation of real estate objects. Digital tools ensure a new quality of interaction among market participants, including construction companies, lessors, developers, and investors.

Under the current conditions of economic digital transformation, effective management of the development of the real estate market acquires strategic importance for ensuring the sustainable growth of the construction industry, enhancing investment attractiveness, and meeting the socio-economic needs of society.

The increasing complexity of infrastructure projects, the need for updated financial instruments, and the rapid development of digital technologies determine the necessity of improving management approaches to the interaction of key market participants, in particular through financial leasing mechanisms.

Financial leasing acts as an effective tool for attracting investment and increasing the accessibility of real estate for business entities. Combined with the opportunities opened by the digitalization of the construction sector (the introduction of BIM technologies, smart contracts, and digital platforms), this creates new challenges and, at the same time, prospects for strategic management at the intersectoral level.

However, in domestic management practice, there is still insufficient integration of digital solutions into the mechanisms of real estate market and financial leasing management, which limits the development potential of innovation in the construction industry and highlights the need for the development and scientific substantiation of strategic approaches to managing these processes.

Literature review. The issues of strategic management considering the interaction between the real estate market and financial leasing have been addressed in the works of numerous authors, particularly in the context of: the digital transformation in the real estate sector (Sittler, 2017) – the real estate sector is transforming into a digital ecosystem through the integration of technologies such as Building Information Modeling (BIM), the Internet of Things (IoT), and big data analytics; the enhancement of the efficiency of real estate operations and management (Özdilek, 2024) – digitalization contributes to the improvement of managerial decision-making quality and customer experience based on data; and the implications of strategic management due to increased stakeholder adaptability to new technologies and market demand (David, Zarli, Mirarchi, Naville, & Perissich, 2021) – effective strategic management plays a significant role in leveraging digitalization in the construction sector.

However, despite the availability of scientific publications on this topic

(Sittler, 2017; Özdilek, 2024; David, Zarli, Mirarchi, Naville, & Perissich, 2021), further detailed research is required on issues related to strategic management based on the digitalization of the construction sector, taking into account the interrelation between the real estate market and financial leasing. In particular, there is a need for a more in-depth study of how digital platforms can enhance operational efficiency and contribute to the improvement of financial operations in the real estate sector.

Aims. The aim of the article is to investigate the role of strategic management based on the digitalization of the construction sector, taking into account the interrelation between the real estate market and financial leasing.

Methods. The methodological basis of the study comprises a set of general scientific and specialized methods that ensure a comprehensive analysis of the processes of strategic management of the interaction between the real estate market and financial leasing under the conditions of digitalization in the construction sector. In particular, the dialectical approach is applied to study phenomena in their interrelation, development, and mutual conditionality; systems analysis is used to determine the structure of interaction among elements of the construction sector, the real estate market, and financial leasing instruments under the influence of digital technologies; methods of comparative analysis; economic and statistical methods; and the structural-functional approach are employed to identify trends, challenges, and the development potential of digital tools in construction.

Results. Strategic management requires an integrated vision of the interaction between digital platforms, leasing mechanisms, and construction processes. A critical assessment of the mechanisms of interaction within the "construction – real estate – financial leasing" system, through a retrospective generalization of their specific manifestations and defining characteristics, served as the basis for the conceptualization of the mechanisms of such interaction (Figure 1).

Financial leasing provides a flexible financing option for real estate acquisition, making it more accessible to individuals and businesses (Denysenko, Breus, Levchenko, Prytula, & Balymov, 2024).

The integration of digital tools into financial leasing processes can streamline operations, reduce costs, and increase transparency, thereby attracting more participants to the market (Denysenko, Breus, Levchenko, Prytula, & Balymov, 2024).

The development of digital platforms can facilitate communication and data exchange among stakeholders, enhancing collaboration and efficiency in the real estate market (David, Zarli, Mirarchi, Naville, & Perissich, 2021).

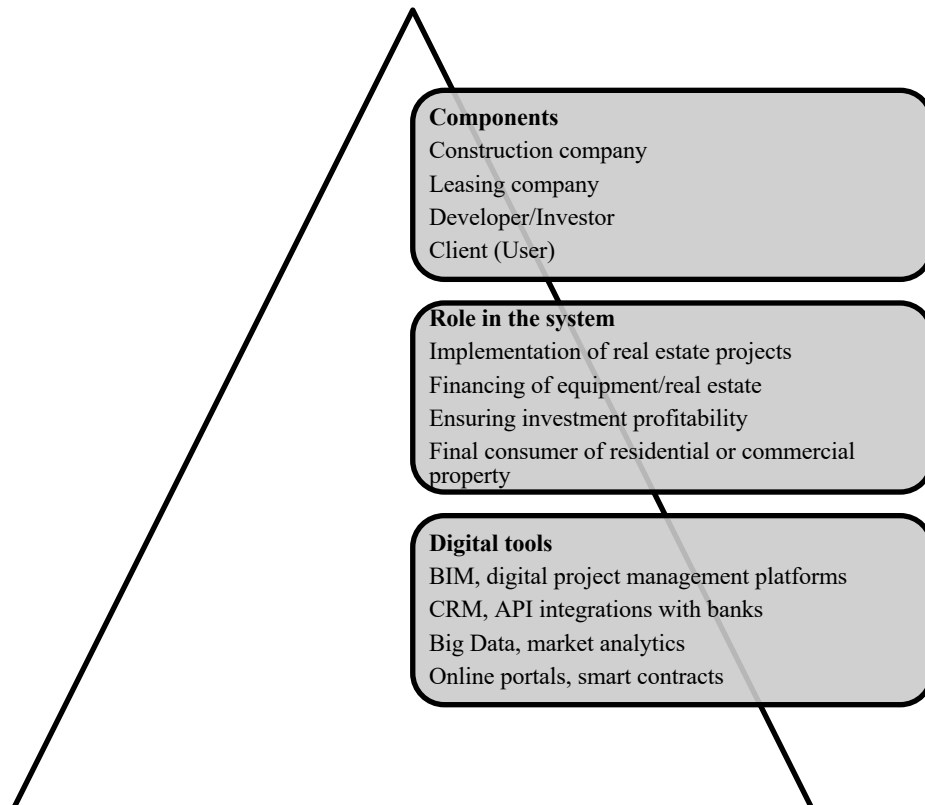


Figure 1. Mechanisms of interaction within the "construction – real estate – financial leasing" system

Source: systematized by the authors

Despite the significant opportunities offered by the digitalization of the construction sector to strengthen the connection between the real estate market and financial leasing, it also presents a number of challenges, such as the need for regulatory frameworks and the potential for increased market volatility. Addressing these issues is essential for maximizing the benefits of digital transformation in this domain.

Digitalization significantly improves the operational efficiency of financial leasing in the real estate market by streamlining processes, enhancing decision-making, and facilitating better communication. The integration of technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and Management Information Systems (MIS) enables leasing companies to adapt to market demands and improve service delivery. Digital technologies promote increased automation of processes by improving decision-making – MIS provides real-time data analytics, enabling informed decisions and strategic planning (Imran, 2024); enhance transaction transparency and accuracy through the availability of comprehensive real estate information on digital platforms (Costa, 2024); increase accessibility and user experience – real estate applications allow clients to search and conduct transactions remotely, improving convenience and access (Costa, 2024); and simplify communication and transaction processes through features such as instant messaging and digital signatures, thereby enhancing the user experience (Costa, 2024).

Conversely, although digitalization offers numerous advantages, challenges such as data security, system integration, and user adoption remain critical issues that may hinder the full realization of operational efficiency in financial leasing (Imran, 2024; Wang, 2024).

The digitalization of the construction sector is increasingly recognized as a strategic imperative that can enhance efficiency and resilience, particularly in relation to the real estate market and financial leasing. This transformation not only streamlines construction processes but also aligns with the evolving demands of housing markets, facilitating access to housing through innovative financial mechanisms.

The state and challenges of digitalization in the construction sector in Ukraine are determined by the following factors:

1. Level of BIM implementation: high implementation costs, shortage of qualified personnel.
2. Use of digital platforms: fragmented systems, lack of a unified environment.
3. Integration with leasing instruments: legal conflicts, limited access to financing.
4. Online access to the real estate market: limited analytics, unstructured offers (Denysenko, Breus, & Prytula, 2024; Breus, & Balymov, 2024; Denysenko, Breus, & Balymov, 2024; Breus, & Denysenko, 2023; Denysenko, & Breus, 2021, 2023).

Digitalization introduces advanced technologies such as Building Information Modeling (BIM), artificial intelligence, and the Internet of Things, which enhance project management and operational efficiency (Wang, 2024).

A strategic approach to digitalization is essential, requiring comprehensive change management protocols to ensure successful implementation and integration within construction firms (Nikmehr, Hosseini, Martek, Zavadskas, & Antucheviciene, 2021).

Based on the analysis of the essential manifestations of the digitalization problem in the construction sector in Ukraine, it is reasonable to identify the main strategic directions of digital development in the construction sector (Table 1).

Table 1. Strategic Directions of Digital Development in the Construction Sector

Direction	Expected Results	Digital Solutions
Integration of financial leasing	Increased investment accessibility	Electronic leasing platforms, smart contracts
Platformization of interaction	Transparency, speed of transactions	Marketplaces for construction/real estate assets
Digital transformation of the market	Price predictability, demand dynamics	Big Data + AI-based market analytics
Electronic certification of properties	Enhanced trust and transparency	Blockchain for property rights registration

Source: systematized by the authors

The integration of digital tools has a significant impact on the real estate market by increasing the accuracy and speed of construction, which contributes to the expansion of housing supply and affordability, particularly through financial leasing agreements (Denysenko, Breus, Levchenko, Prytula, & Balymov, 2024).

Digitalization supports the development of smart construction platforms, which will facilitate the optimization of resource allocation and project delivery, thereby enabling an efficient response to market demand (Wang, 2024).

Financial leasing provides a viable pathway for individuals to access housing, and digitalization facilitates the management of leasing processes and improves transparency (Denysenko, Breus, Levchenko, Prytula, & Balymov, 2024).

The interconnection between digitalization and financial leasing will contribute to increasing the investment appeal of real estate, as streamlined processes reduce risks and costs associated with property development (Kaya, & Dikmen, 2024).

The integration of digital tools such as Building Information Modeling (BIM) has a considerable impact on project management in the context of financial leasing in construction. The main advantages include:

1. Improved financial planning – cost estimation accuracy: BIM enables precise cost calculations through 5D modeling, which integrates time and cost dimensions, allowing project managers to accurately forecast expenses (Musonda, 2019).

2. Enhanced risk management efficiency: BIM makes construction a vital asset for both project managers and investors. It significantly contributes to proactive risk mitigation throughout the entire life cycle of a construction project by strengthening risk management, increasing safety, and optimizing project efficiency. The integration of BIM into construction processes enables proactive identification and reduction of risks, which is critical for successful project execution. BIM facilitates early risk identification and management by integrating traditional risk management approaches with advanced modeling techniques, helping to identify and mitigate observable risks at various stages of the project, from feasibility to construction (Abosaq, & Batool, 2024).

Improved coordination and stakeholder communication:

The use of BIM in risk management planning enhances cross-disciplinary coordination and communication with stakeholders, which are common sources of risk in construction projects (Abdelalim, & Elnaggar, 2024).

1. Resource optimization: BIM supports better resource allocation, waste minimization, cost savings, and improved financial return on investment (Mi & Li, 2024).

2. Improved decision-making efficiency: Enhanced data visualization

and stakeholder collaboration through BIM lead to more informed decision-making, which is essential for effective management of financial leasing contracts (Mi, & Li, 2024).

3. Increased operational efficiency: The digitalization of project management processes via BIM reduces the risks associated with traditional methods, contributing to time savings and cost reduction (Agostinelli, Cinquepalmi., & Ruperto, 2019).

Despite the considerable benefits of digitalization in construction, key challenges remain, mainly related to the need for substantial investments in technologies and training, the lack of a unified digital environment, regulatory and legal support, and insufficient data availability (Table 2).

Table 2. Status and Challenges of Digitalization in the Construction Sector in Ukraine

Indicators	Problematic Aspects
Level of BIM implementation	High implementation costs, shortage of qualified personnel
Use of digital platforms	System fragmentation, lack of a unified digital environment
Integration with leasing instruments	Regulatory and legal framework issues, limited access to financing
Online access to the real estate market	Limited analytics, unstructured property listings

Source: systematized by the authors

Moreover, the transition may not yield immediate results, as firms must navigate the complexities of change management and market adaptation. Resistance to change and the challenges of data integration may hinder decision-making in project management, particularly within the traditional segments of the construction industry (Fonseca, Benito, & Piña Ramírez, 2024).

Discussion. Modern digitalization is paramount for enhancing the investment attractiveness of real estate, particularly within the context of financial leasing. By transforming construction into a more reliable and predictable asset class, the implementation of streamlined digital processes directly leads to a reduction in risks and costs associated with project development. This not only makes projects more appealing to investors but also ensures the necessary transparency and efficiency that are critically important for the successful execution and fulfillment of leasing contracts.

The integration of Building Information Modeling (BIM) is a key element of this digital transformation, radically influencing the management of lease-funded projects. The benefits of BIM for financial planning and resource optimization are substantial:

BIM significantly improves financial planning and the precision of cost estimation. Utilizing 5D modeling, which integrates time and cost dimensions, BIM enables project managers to accurately forecast expenses and ensure high calculation accuracy. BIM promotes resource optimization, waste minimization, and, consequently, an increased financial return on

investment.

Furthermore, BIM plays a crucial role in risk management and stakeholder communication. It acts as a vital asset for effective interaction among project participants, substantially contributing to proactive risk mitigation throughout the entire construction lifecycle, thereby increasing safety and optimizing overall project efficiency. The integration of BIM allows for the early identification and timely mitigation of observable risks at various stages. Concurrently, utilizing BIM in risk planning improves interdisciplinary coordination and communication with stakeholders, which are common sources of risk in construction projects. This capability, coupled with enhanced decision-making efficiency through data visualization, is critical for the reliable administration of financial leasing agreements.

Despite these considerable advantages, the full digitalization of the construction sector, particularly in Ukraine, confronts several key challenges. The primary obstacles include:

1. The necessity for substantial investments in technology and the training of qualified personnel.
2. Difficulties in integrating digital tools with leasing mechanisms, which are complicated by issues in the regulatory and legal framework and limited access to financing.
3. Collectively, these challenges risk delaying the full realization of the potential of BIM and digitalization, which is essential for risk reduction and the enhancement of operational efficiency.

Overall, digitalization and financial leasing are intrinsically linked and are key drivers for increasing real estate investment attractiveness. The rationalization of processes through digital tools directly results in reduced development risks and costs. This approach ensures greater predictability and transparency, crucial for investors and lessors aiming to minimize financial exposure.

In this context, the primary focus is placed on the role of BIM as the central tool connecting technology, management, and financing. While acknowledging the significant positive impacts of digitalization on the construction sector, our research on strategic management and its interconnection with the real estate market and financial leasing aligns with the findings of other researchers, thereby confirming the influence of global trends on the Ukrainian real estate market and construction sector, and highlighting specific local challenges.

Conclusion. Strategic management in the construction sector under conditions of digital transformation requires new management paradigms based on a systemic consideration of the interrelationship between the real estate market and financial leasing. Digitalization is not only a tool for increasing efficiency but also a prerequisite for sustainable development. The integration of digital solutions with financial instruments helps reduce investment barriers, accelerates project implementation, and ensures

transparency of market processes. The proposed measures may serve as a foundation for the development of national policy on digital construction development.

Funding. The authors declare that no financial support was received for the research, authorship, and/or publication of this article.

Conflict of interest. The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement. The authors declare that no Generative AI was used in the creation of this manuscript.

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References:

1. Abdelalim, A. M., & Elnaggar, A. M. E. (2024). Investigating the role of building information modeling in risk management of construction projects. *Journal of Civil Engineering, Science and Technology*, 15(2), 111–135. <https://doi.org/10.33736/jcest.6292.2024>
2. Abosaq, N. H., & Batool, S. M. (2024). A novel bim-enabled software based solution for mitigating construction risk management. *Yanbu Journal of Engineering and Science*. <https://doi.org/10.53370/001c.94947>
3. Agostinelli, S., Cinquepalmi, F., & Ruperto, F. (2019). 5d bim: tools and methods for digital project construction management. *BIM 2019: International Conference on Building Information Modeling* (pp. 205–215). WIT Press. <https://doi.org/10.2495/BIM190181>
4. Breus, S. V., & Balymov, O. S. (2024). Основні аспекти діджиталізації будівельної сфери України. The 23rd International Scientific and Practical Conference "World Ways and Methods of Improving Outdated Theories and Trends" (pp. 38–41). International Science Group. <https://doi.org/10.46299/ISG.2024.1.23>
5. Breus, S. V., & Denysenko, M. P. (2023). The theoretical basis of ensuring sustainable development through the prism of managing the state of economic security. *Economics and Management*, (3), 16–23.
6. Costa, M. (2024). Digital transformation in the real estate market: how apps are redefining transactions and accessibility. *Revista Científica Sistemática*, 14(8), 561–568. <https://doi.org/10.56238/rcsv14n8-005>
7. David, A., Zarli, A., Mirarchi, C., Naville, N., & Perissich, L. (2021). DigiPLACE: Towards a Reference Architecture Framework for Digital Platforms in the EU Construction Sector. *Construction Digital Transformation* (pp. 573–582). CRC Press. <https://doi.org/10.1201/9781003191476-69>
8. Denysenko, M., Breus, S., Levchenko, O., Prytula, Y., & Balymov, O. (2024). Strategic Management: From The Digitalization Of The Construction Industry To The Development Of The Housing Market Under The Terms Of Financial Leasing. *Economics, Finance and Management Review*, (3(19)), 78–90. <https://doi.org/10.36690/2674-5208-2024-3-78-90>
9. Denysenko, M. P., & Breus, S. V. (2021). The world experience of managing investment activity and the prospects of its implementation on the territory of Ukraine. The driving force of science and trends in its development: Collection of scientific papers «SCIENTIA» with Proceedings of the I International Scientific and Theoretical Conference (Vol. 1, pp. 30–32). European Scientific Platform.
10. Denysenko, M. P., & Breus, S. V. (2023). Investment and innovation principles of managing the development of the national economy of Ukraine through the prism of consideration of the state economic security. Social factors of economic growth, analysis of the effectiveness of tourism and management: collective monograph (pp. 24–31). Primedia eLaunch.
11. Denysenko, M. P., Breus, S. V., & Balymov, O. S. (2024). The rental housing market of Ukraine through the prism of digitization of the construction sector. *Moderní aspekty vědy: XLVII. Díl mezinárodní kolektivní monografie* (pp. 127–136). Mezinárodní Ekonomický Institut s.r.o.
12. Denysenko, M., Breus, S., & Prytula, Ye. (2024, April 26). Development of the rental housing market through the prism of managing the state economic security for the recovery of the economy of Ukraine in the during the war and post-war periods. *4th International Conference on Corporation Management (ICCM)*, Estonia. <https://conf.scnchub.com/index.php/ICCM/ICCM-2024/paper/view/742>

13. Fonseca, S. S., Benito, P. A., & Piña Ramírez, C. (2024). Digital Horizons in Construction: A Comprehensive System for Excellence in Project Management. *Buildings*, 14(7), 2228. <https://doi.org/10.3390/buildings14072228>
14. Kaya, H. D., & Dikmen, I. (2024). Using system dynamics to support strategic digitalization decisions. *Journal of Construction Engineering and Management*, 150(4), 04024009. <https://doi.org/10.1061/JCEMD4.COENG-1411>
15. Mi, Z., & Li, J. (2024). Maximizing project efficiency and collaboration in construction management through building information modeling (BIM). *Applied and Computational Engineering*, 72(1), 24–29. <https://doi.org/10.54254/2755-2721/72/20240986>
16. Musonda, I. (2019). The Strategic Application of Building Information Modelling (BIM) to the Role of Construction Project Management. *Y Creative Construction Conference 2019* (pp. 470–479). <https://doi.org/10.3311/CCC2019-065>
17. Nikmehr, B., Hosseini, M. R., Martek, I., Zavadskas, E. K., & Antucheviciene, J. (2021). Digitalization as a Strategic Means of Achieving Sustainable Efficiencies in Construction Management: *A Critical Review*. *Sustainability*, 13(9), 5040. <https://doi.org/10.3390/su13095040>
18. Özdilek, Ü. (2024). From Bricks to Bytes: Transforming Real Estate into the Core Platform of the Digital Ecosystem. *Platforms*, 2(4), 165–179. <https://doi.org/10.3390/platforms2040011>
19. Shah Md Imran. (2024). Revolutionizing Operations: The Transformative Power of MIS in Real Estate Industry. *Non Human Journal*, 1(02), 5–12. <https://doi.org/10.70008/nhj.v1i02.11>
20. Sittler, P. (2017). Digitalization in Real Estate (Research Papers in Economics). *Research Papers in Economics*. https://econpapers.repec.org/RePEc:arz:wpaper:eres2017_128
21. Wang, F. (б.д.). The Necessity of Strategic Transformation of Real Estate Digital Operations from the Perspective of Information Economic Management. <https://doi.org/10.32826/cude.v1i129.807>
22. Wang, Z. (2024). Application of Digital Management Tools in the Construction of Building Projects. *International Journal of Architectural Engineering and Design*, 1(1), 11-17. <https://doi.org/10.70088/wp2g6593>