

Benchmarking for Integration of Artificial Intelligence in Strategic Firm Management

Neli Nikolova

Department "Management"

Technical university of Gabrovo

Gabrovo, Bulgaria

nik_nel@abv.bg

Abstract—The article focuses on conducting a benchmarking study to identify and analyze good practices for integrating artificial intelligence into strategic management at the company level. By comparing and evaluating effective models, tools, and approaches, key success factors, benefits, and risks in implementing AI in strategic planning processes, making informed management decisions, and achieving sustainable competitive advantage have been identified. Benchmarking is considered an effective tool for reducing risk, optimizing resources, and increasing efficiency. The conclusions and recommendations made are applicable to improving strategic planning processes and increasing the competitiveness of organizations in the digital business environment.

Keywords—Artificial intelligence, benchmarking, good practices, strategic management

I. INTRODUCTION

In the conditions of the fifth industrial revolution, business and non-profit organizations [1], [2] are faced with the challenge of improving the efficiency and quality of their production, reducing production costs and cycles. The topic is extremely relevant in view of the penetration of artificial intelligence (AI) both into the activities of a number of organizations and into public life, considered in the publications [3], [4], [5] of a number of authors. Research [6], [7], [8] on the integration of artificial intelligence AI into strategic corporate management is an active and rapidly developing scientific field that covers many aspects: from strategic planning and decision-making to organizational capabilities, adaptability, innovation and sustainable competitive advantage. AI continues to change business management, industrial practices and organizational strategies.

The aim is to perform a benchmarking analysis of leading practices for integrating AI into strategic corporate management regarding the identification, comparison and

evaluation of effective models, tools and approaches, while identifying key success factors, benefits and risks in implementing AI in the processes of strategic planning, management decision-making and sustainable competitive advantage. Based on the considerations, recommendations have been formulated for their application in a specific organizational environment.

To achieve the goal, the following tasks have been solved:

- Analysis of the nature and role of artificial intelligence in modern strategic corporate management.
- Research of basic concepts, models and tools for integrating AI into management processes.
- Selection of leading organizations and/or practices as the object of benchmarking analysis.
- Identification and comparison of good practices for using artificial intelligence in strategic planning and decision-making.
- Assessment of the effects of AI implementation on the efficiency, competitiveness and sustainable development of companies.
- Analysis of risks, limitations and ethical aspects in integrating AI into strategic management.
- Diagnosis of key success factors and indicators for assessing the effectiveness of AI solutions.

Integrating AI into management allows for the automation of routine and repetitive tasks, freeing up time for higher-level strategic thinking and innovation. This effect is observed in technology giants, whose practices can also be adapted in traditional industries, based on

Online ISSN 3044-7771

<https://doi.org/10.68302/std2026.vol2.100>

© 2026 The Author(s). Published by Green Future Technologies.

This is an open-access article under the [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

technological and organizational benchmarking to integrate AI in order to optimize processes, operations and make strategic decisions for product development and improving the customer experience. With the help of AI, companies will be able to increase their efficiency and productivity by analyzing huge data sets, discovering patterns and trends, and providing high-accuracy forecasts — making managers more informed and adaptable to market changes.

There are numerous classifications of benchmarking and its forms of manifestation in literary and online sources. One of the most famous and widely used classifications is that of Robert Kamp [9], who defines benchmarking as: "... the search in industrial development for that best practice, the application of which leads to a more effective and perfect form of business performance." Benchmarking is perceived as an element of the strategy of companies, organizations and institutions. It is carried out in five main phases [10]: planning of activities, integration with corporate strategy and business interests, specific models and indicators for application, analysis of results, introduction of best practice (maturity phase). Benchmarking is seen as an effective tool to reduce risk, optimize resources, and accelerate the AI implementation process, especially in environments with limited capacity and experience. Benchmarking is a management approach for sustainable development that involves studying and implementing best practices from leading companies to increase efficiency, quality, and productivity.

II. MATERIALS AND METHODS

The benchmarking conducted includes five Bulgarian companies with implemented or clearly developed AI practices. **Payhawk** is a prime example of a company with Bulgarian roots and active operations in Bulgaria that has implemented artificial intelligence not as an isolated technological module, but as part of its core product, management and organizational logic. In parallel, a comparative benchmarking was established with four more companies operating in Bulgaria – **TBI bank, DSK Bank, Sirma Group and Yettel Bulgaria**, in which artificial intelligence contributes to more effective strategic management, digital transformation, risk management, process automation and organizational adaptation. The selection of companies was carried out according to strict criteria: presence of active activity in Bulgaria, publicly available and sufficiently reliable data for real implementation of AI, presence of a connection between AI and strategic management, data on management model and organizational adaptation, as well as the ability to conduct a sufficiently substantiated comparative analysis.

The study shows that the five companies use AI differently. Payhawk is a strong example of AI embedded in the core product and in the work of the CFO function. Tbi bank uses AI in credit analysis, pricing, digital application and risk management. DSK Bank is developing AI in customer service and in the management framework for AI governance as part of a broader digital transformation. Sirma Group is developing AI both as its own internal strategic direction and as a corporate AI

platform for customers, which distinguishes it with the most pronounced AI-centric identity at the group level.

The main conclusion is that the most successful practices are not limited to the implementation of models or agents. They are based on a combination of a clear role of senior management, manageable risk, appropriate infrastructure, organizational learning, precise control over data and the ability to connect AI to measurable business value. This is precisely why benchmarking should be seen not only as a technology comparison, but as a comparison of management models.

The methodological approach combines descriptive analysis, comparative analysis (benchmarking) and management interpretation. The basis of the study are official company sources – company websites, official newsroom publications, publications about the management team, career roles, investor materials and public corporate reports. Where necessary, independent business publications were also used, but only as a supplementary source, and not as the main carrier of the facts.

The criteria for inclusion in the benchmarking are the following:

- first, the company must be Bulgarian or have Bulgarian roots and have active activities in Bulgaria;
- second, there must be public evidence of implemented AI;
- third, the use of AI must be related to strategic management, risk management, efficiency, product development or organizational adaptation;
- fourth, it must be possible to trace the roles of senior management and the management logic behind the implementation;
- fifth, the company must provide sufficient information for a more detailed and defensible analysis.

It should be explicitly noted that public data is not equally detailed for all companies. Payhawk and Sirma Group provide more complete and conceptually developed public materials on their AI direction. At tbi bank and DSK Bank, the information is more fragmented, but still sufficient to draw reliable conclusions about the strategic and managerial role of AI. This is not a weakness of the analysis itself, but a limitation of the publicly available facts:

- Connection between AI and strategic management, and not just local automation.
- Availability of specific examples of AI applications, agents, scoring models, governance mechanisms or AI platforms.
- Ability to track the role of the CEO, CFO, CTO or other senior managers in the company's adaptation.
- Availability of organizational signals of sustainability: specialized teams, governance

roles, process changes, new competencies and investments.

The main subject of the benchmarking study and a leading example of embedded AI in core product logic is Payhawk, founded in 2018. By 2026, it is positioned as an AI-native platform for managing corporate expenses, payments, invoices, business cards, travel and procurement. The company publicly lists over 400 employees, over 5,000 customers, presence in 32 countries and 9 offices, with Sofia remaining a key location for engineering, product, AI and strategic functions. From a management perspective, Payhawk is particularly important for the study because AI is not presented as an external integration or marketing addition, but as a factor that changes the way the company creates value. The management team is represented by three co-founders. This triad is important because at Payhawk, the strategic direction, financial logic and technological infrastructure are connected in a common line of development. The company's most significant publicly announced AI initiative is the "AI Office of the CFO," unveiled in April 2025. It includes specialized AI agents such as the Financial Controller Agent, Procurement Agent, Travel Agent, and Payments Agent. Their function is not simply to answer questions, but to perform specific processes – collecting documents, processing requests, supporting expense procedures, tracking approvals, and other repetitive activities in the finance function.

The essence of Payhawk's model [11] is that agents are framed by existing company rules, permissions, workflows, spend controls and audit trails. This means that AI is not left to operate freely outside of management control. Quite the opposite – autonomy is limited by company policies, access rights and control mechanisms. Thus, Payhawk chooses a model of controlled autonomy, which is particularly relevant in a financial environment.

The company is further developing its AI capacity through specialized roles in Sofia. Advertisements for Applied AI Engineer and related engineering roles show work on autonomous agents, evaluation pipelines, retrieval approaches, context handling, observability and production deployment. This is an important indicator that AI is not a temporary project, but a permanently built organizational competence.

An even stronger signal of the managerial nature of the change is provided by the Founder's Associate role in the CEO Office. There, the company describes real-time visibility into performance metrics, OKR automation, pricing and monetization analyses, as well as work on cross-functional execution. Therefore, the adaptation is not only product-related, but also affects the company's management operating system. In his published positions, one of its founders describes AI as a force that requires rethinking the strategy, product and organization. This is important because it shows a managerial understanding according to which competitive advantage no longer comes only from code, but from a combination of data, regulatory readiness, customers, contractual relations, culture and the ability to change. In this sense, Payhawk can be seen as an

example of a company that understands AI not only technologically, but also strategically. The effect on work is twofold. On the one hand, the company claims that AI agents reduce administrative actions and accelerate financial cycles. On the other hand, the work of teams shifts towards analysis, control, exception handling and higher added value. For strategic management, this means that the CFO function is moving from an operational workload to a stronger role in managing resources and decisions.

The role of the CEO (Chief Executive Officer) is strategic and integrative. As the top manager, he or she guides the company toward a model where AI doesn't just accelerate existing processes, but transforms the product offering itself. This is a classic form of strategic adaptation: instead of adding limited automation, the company restructures its value proposition around the ability to eliminate work, free up time, and support decision-making in finance teams.

The CEO's role is key because at Payhawk, AI is directly tied to the finance function and its transformation. Top executives consistently link cost management, real-time visibility, and automation to better managing growth. This means that AI is not seen as a separate IT initiative, but as a tool for more mature financial discipline and stronger strategic involvement of finance leadership. It provides the infrastructure, security, and scalability, pointing out that AI can only deliver value when built on a solid technology foundation. This puts technology management at the service of business strategy, not the other way around. Such a logic reduces the risk of chaotic implementation and supports long-term sustainability.

Among Payhawk's strengths is the deep integration of AI into the core product. This creates a more difficult to replicate competitive advantage compared to companies that use AI only for customer service or single internal activities. An additional advantage is that autonomy is limited by permissions, workflows and control mechanisms, which is especially valuable in a financial context.

Another strength is organizational consistency. There are signs of AI engineering capability, strategic engagement of the CEO Office and a connection with the CFO function. This means that the company does not rely on separate technical experiments, but on a coordinated management transformation.

Among the weaknesses and risks, it should be noted the high dependence on data quality, the correct configuration of access and control over delegated actions. The more agents move from assistance to actual execution of actions, the greater the importance of governance mechanisms, verification and liability in case of error. In addition, some of the published benefits are at the level of company claims and early results, which means that they should be formulated cautiously in academic presentations.

TBI bank - a Bulgarian bank with a clear connection between AI, credit process, risk and digital growth.

TBI bank is an active bank with a center of activity in Southeastern Europe and a strong presence in Bulgaria. Its official publications for 2024 [12] show over 1 million loans issued, over 2.2 million loan applications, total assets of 1.77 billion euros and a share of digital applications of about 70%. The bank explicitly states that it continues to invest in technology and AI solutions, which links financial results with technological innovation.

From a management perspective, tbi bank offers an interesting model because AI is not so much related to user assistants, but to the economics of the credit process. Particularly strong evidence of implemented AI is contained in the public prospectus for the bank's MREL bonds. There, a new customer credit scoring model is explicitly described, which updates the customer's credit rating in real time in the mobile application and is created with AI technology. In parallel, a risk-based pricing model and automation in customer operations and risk management are described, aimed at preventing fraud and money laundering. This combination is particularly important for strategic management, because it shows that AI is connected to the core of the banking economy: credit decision, pricing, risk, speed of approval, digital customer experience and process efficiency. TBI bank uses AI where it directly affects revenue, risk and competitiveness. In official interviews, bank representatives indicate that AI and machine learning are used in onboarding and risk assessment, and the bank describes itself as having transformed from a traditional bank to a challenger bank. This is managerially important because it shows that technological change is part of a broader strategic transformation, not just a local process improvement. The effect on the organization can be interpreted as moving key decisions to more centralized and automated decision points. In the credit business, this means faster decisions, more precise customer segmentation, personalized offers and potentially a better risk-reward ratio. With proper management, such a model increases the manageability of growth.

At TBI bank, the adaptation is manifested in the fact that AI management is not limited to the IT department. The presence of a Chief Data, AI & Monetization Officer, as well as clearly defined risk and credit business departments, suggest that data and AI solutions are considered part of the bank's overall business architecture. This is a mature model because credit risk, compliance and monetization are interconnected. The CEO role is related to the transformation of the business model towards a more digital bank. Public statements by Petar Baron describe a transition from branch-based banking to more centralized automated decision-making points. This shows that AI is part of a management philosophy of scaling, not just a technological infrastructure. From a strategic management perspective, tbi bank is a strong example of how AI can be used to improve a core revenue activity. This is different from models in which AI is primarily focused on customer communication or internal office productivity.

A strength of TBI bank is that AI is implemented in processes with direct strategic importance: credit decision, risk, pricing and digital application. This provides great potential for real economic impact and for better growth

management. Another strength is the institutionalization of AI and data functions in the management model. This reduces the likelihood that AI will be used fragmentarily or without sufficient connection to business results. A major risk is that the banking sector is highly regulated and errors in scoring, pricing or fraud detection can have direct financial and reputational consequences. Therefore, success depends not only on the quality of the models, but also on governance, explainability, compliance and continuous control.

DSK Bank is an example of AI in customer service, digital transformation and AI governance. It is one of the largest banks in Bulgaria and officially declares a long-term growth strategy combined with a large-scale digital transformation. The public description of the bank emphasizes investments in digitalization of operations, development of digital channels and innovative banking services. [13].

The management model of DSK Bank is particularly interesting for benchmarking, because in addition to the classic financial and operational logic, it clearly shows functions such as Head of Digital, Data and Technologies, Head of Strategy, Finance and Operations and Head of Transformation and Change Management. This is indicative that digital change and adaptation are institutionalized management priorities.

The bank's most visible public AI solution is the officially announced AI assistant, unveiled in July 2025. The bank describes it as the first fully AI-based assistant in Bulgaria, built on OpenAI's generative AI, trained on the DSK context and capable of understanding natural language and responding within seconds. The assistant is part of the bank's ongoing digital transformation. At first glance, this solution seems more limited than the Payhawk and tbi bank models, as it is primarily focused on customer communication. A deeper analysis shows that the bank also has an Innovation & AI Office, with which AI is viewed not only as a front-end tool, but also builds a framework for risk management and compliance.

This management direction is very important for strategic management. In a highly regulated bank, sustainable implementation of AI cannot be based on technological enthusiasm alone. It requires rules, responsibilities, policy frameworks, documentation, risk assessment and clear organizational ownership. In this sense, DSK Bank is a valuable benchmark for AI governance in the Bulgarian environment. The effect on work can be sought in several directions: improving the speed and accessibility of customer information, offloading standard service activities, enhancing the digital experience and building internal capacity for further implementation of AI. Although public metrics are more limited, available data show that the bank is moving towards a more systematic, rather than occasional, use of AI.

At DSK Bank, adaptation is manifested through organizational design. The presence of separate senior roles for digitalization, strategy, finance, operations and change shows that AI initiatives can be integrated into a broader transformational framework. This is different from the

approach of smaller technology companies, where the same leader often combines multiple functions. The CEO and C-level management work in an environment where the implementation of AI must be compatible with banking regulation, security and trust. Therefore, the adaptation here is more cautious, but potentially more sustainable. The management emphasis is not only on rapid implementation, but on controlled implementation. From a benchmarking perspective, this makes DSK Bank a useful counterpoint to Payhawk. While Payhawk is strong in product-native AI, DSK Bank is strong in the management question of how to implement AI in a large, highly regulated institution without disrupting manageability.

A strength of DSK Bank is its institutional maturity. The bank builds AI solutions in an environment of clear management, digital transformation and governance mechanisms. This is especially important in the context of trust, regulations and customer security. Another plus is that the AI assistant is a visible entry point for broader organizational learning. Such initiatives often also work as a tool for accumulating experience, data and organizational habits when working with AI. As a relative weakness, it can be pointed out that the available public information shows a more limited deployment of AI in the core banking logic compared to Payhawk or TBI bank. Therefore, in its publicly visible part, DSK Bank seems stronger in governance and customer front-end than in a proven large-scale restructuring of the core product economy through AI.

Sirma Group [14], [15] - a Bulgarian technology group with an AI-centric identity, corporate governance and enterprise AI platform has a special place in this benchmarking, because its very history is connected with artificial intelligence. The group was founded in 1992 as Sirma AI and over the years has developed into one of the largest Bulgarian software groups. By 2026, the company publicly lists over 800 employees, a dual listing on the Bulgarian Stock Exchange and the Frankfurt Stock Exchange, and a pronounced focus on AI-driven transformation.

Unlike the other companies under consideration, Sirma Group is not just a user of AI for its own processes. It develops AI both as a corporate product and as a strategic transformation direction of the group itself. The Sirma.AI Enterprise platform is presented as a means to build, deploy and scale AI agents, agent teams and agentic workflows in cloud and on-premise environments with full control over data and AI operations. This model has strong management value because it places Sirma in the role of both a producer and operator of AI capabilities. The company's public materials show not only AI engineers, AI architects, MLOps, data science, RAG and orchestration capabilities, but also roles such as AI Ethics & Safety. Therefore, the organizational capacity is built much more broadly than the typical company that simply uses an external AI tool.

At the corporate governance level, Sirma Group has a clearly defined board and committees, including Investment, Risk and Sustainability, Remuneration Committee and Disclosure Committee. This is particularly

important for benchmarking, as it allows the AI strategy to be interpreted not only from a technological or product perspective, but also from a formal governance perspective.

In its investor materials, the company explicitly links its long-term strategy to AI-driven transformation. In publications from 2025, it describes restructuring and consolidation aimed at synergies and a stronger focus on high added value, especially in AI and the automation of financial and administrative processes. This is a direct link between AI and the strategic reorientation of the company.

Sirma Group has clearly defined board roles, C-level responsibilities and specialized AI positions. CEO (Chief Executive Officer), CFO (Chief Financial Officer) and CTO (Chief Technology Officer) are clearly part of a model where AI is not a peripheral topic, but an axis of long-term development, capital market narrative and product evolution. Particularly valuable is the fact that the group combines enterprise software logic with management mechanisms of a public company. This means that the AI direction must be aligned simultaneously with market, risk, sustainability, accountability and investor expectations. This combination makes Sirma Group perhaps the strongest Bulgarian example of formalized AI governance at the group level.

Organizational adaptation is also visible in the development of competencies: AI engineering, data science, ethics, RAG (Retrieval-augmented generation), orchestration and enterprise deployment. Here, AI is seen not only as a tool, but as a whole set of capabilities that must be constantly developed. This is a sign of high organizational maturity.

Sirma Group's core strength is its strategic consistency. AI is present in the company's history, products, investor narrative, leadership structure, and skill set. This creates a deeper AI identity than companies that implement AI in only a few processes. Another strength is its enterprise orientation – a focus on security, on-premise options, data control, multi-LLM (Large Language Model) and AI operations. This is especially important for corporate clients and strategic management in sensitive environments. A potential weakness is the higher complexity of the model. When a group simultaneously builds AI platforms, AI services, and its own internal transformation, it must manage a wider range of technological, market, and execution risks. In addition, enterprise AI sales typically have longer cycles and higher expectations for reliability.

Yettel Bulgaria [16], is developing an AI line mainly in its B2B (Business-to-Business) solutions. They are products, services or software sold by one company to another, aimed at optimizing operations, increasing efficiency and increasing profitability. They are characterized by longer sales cycles, high order value and needs for a personalized approach. The company presents Smart CRM and Smart Drive, which use cloud technologies and artificial intelligence to manage customers, documents and processes. Smart Drive is particularly indicative – a solution with integrated AI for

scanning, extracting, analyzing and categorizing information from files. Thus, Yettel shows how AI can be used for practical digitalization and operational efficiency in small and medium-sized enterprises.

III. RESULTS AND DISCUSSION

TABLE 1 BENCHMARKING STRUCTURE

Company Driving Force	Main AI Focus	Role in Strategic Management	Organizational Adaptation	Main Risk / Weakness
Payhawk Deep integration of AI with permissions and workflow	AI agents for the CFO function, expenses, invoices, procurement, and payments	Turns AI into part of the core product and financial management	AI engineering, CEO Office analytics, control-by-design	Dependence on data quality, access control, and governance for autonomous actions
TBI bank AI is embedded in processes with direct financial impact	Credit scoring, risk-based pricing, onboarding, risk management	Improves lending economics and growth manageability	Senior-level AI/Data functions, connection between risk and monetization	Regulatory risk, explainability, and sensitivity to model errors
Bank DSK Strong institutional framework for controlled implementation	Generative AI assistant customer service, governance framework	Supports digital transformation and creates a foundation for systematic AI adoption	Innovation & AI Office, governance roles, and change management	More limited publicly visible connection between AI and core banking economics
Sirma Group Most formalized AI identity and governance at group level	Enterprise AI platform, AI agents, RAG, orchestration, AI services	Connects AI with long-term strategy, restructuring, and high-margin services	Board-level governance, committees, AI teams, ethics & safety	High execution complexity and longer enterprise cycles
Yettel Bulgaria Diversification and higher-margin B2B services. Need for smarter growth in a saturated telecom market	Customer experience automation (chatbots, digital support, personalization)	Supports evidence-based strategy better pricing, targeted offers, customer lifetime value growth Uses AI to improve productivity, creativity, and internal processes	Shift toward digital-first operating model; more cross-functional teams across IT, marketing, customer care	Privacy concerns, regulatory scrutiny, biased models Employee resistance, skills gaps, unclear return on investment

The comparative analysis shows that the five companies use AI according to different strategic logics. To avoid simplification, the benchmarking is structured

simultaneously according to functional focus, management logic, organizational adaptation, and risk framework.

Analytical conclusions from the comparison

Payhawk is the strongest example of a company that embeds AI in its core product and thereby changes its own value logic. In this case, the strategic effect comes from product-native AI and from the transformation of the CFO function.

TBI bank is the strongest example of AI implemented in processes with a direct impact on the credit economy. This makes its model particularly valuable when looking for a connection between AI, risk, revenue and digital growth.

DSK Bank is the strongest example of institutional and governance-oriented implementation of AI in a large bank. Its role in benchmarking is to show that sustainable implementation does not necessarily mean the most aggressive automation, but sometimes the best management framework.

Sirma Group is the strongest example of AI-centric corporate identity and formalized governance in a Bulgarian technology group. It shows how AI can be both a product, an internal strategic direction and a topic of board management.

Based on the benchmarking conducted with the banks in Bulgaria, Yettel Bulgaria is positioned above the average level in practical use of artificial intelligence, especially in the commercialization of AI services for business customers.

Common Strengths

First, in all five companies, AI is linked to real business processes, not just communication campaigns. This is a significant sign of maturity. Even if the publicly visible form is different, in all cases AI is linked to activities that affect efficiency, decisions, risk or service quality.

Second, in all the companies examined, there are signs that senior management is involved in the adaptation. This may be through the CEO Office and product strategy, through data/AI leadership, through transformation functions or through formal governance structures. This management involvement significantly increases the chance that AI will become a sustainable competitive advantage.

Third, organizational adaptation is not limited to the purchase of technology. There are new roles, new competencies, new processes and in some cases new control frameworks. This is particularly important because it shows that AI transformation is both technological and organizational.

Common Weaknesses and Risks

The biggest common risk is that the closer AI gets to decision-making or execution, the more important governance, access control, data quality, explainability, and accountability become. This risk is most visible in finance and banking processes, but is also relevant to enterprise AI platforms.

A second significant risk is the unevenness of publicly demonstrable results. Many companies report effects and acceleration, but independent external validation of these results is often limited. Therefore, in an academic context, a distinction should be made between publicly claimed effects and independently verified effects.

A third risk is related to organizational readiness. Even with good technology, companies can encounter difficulties if employees are not trained, if there is a lack of clarity about process ownership, or if AI initiatives are not aligned with management priorities. In this sense, organizational learning remains a key factor for success.

Leading practices that stand out in benchmarking

The first leading practice is connecting AI to a core business process, rather than a peripheral function. Payhawk and tbi bank show that the strongest effect is achieved when AI affects the core economy of the company – on CFO operations and on lending, respectively.

The second leading practice is the construction of control-by-design. This is particularly clear in Payhawk and in the governance direction of DSK Bank. Successful implementation of AI requires that it be subject to rules, rights, documentation and verifiability.

The third leading practice is the institutionalization of AI competencies. Sirma Group is the most striking example of this, but there are signals in other companies as well. When AI is supported by a sustainable set of roles, knowledge and management mechanisms, the likelihood of a long-term effect is greater.

The fourth leading practice is senior management commitment. AI does not succeed where it remains locked into a technology team. Success comes where there is management ownership – with the CEO, CFO, CTO, data leadership, transformation offices or board committees.

Payhawk	5	5	4	5	5
TBI bank	4	4	3	4	4
Bank DSK	4	3	5	4	4
Sirma Group	5	4	3	5	4
Yettel Bulgaria	3	4	3	3	4
	strategic interaction	operational automation	customer integration	management and control	scalability
	Criterion				

Fig.1. Comparative analysis of 5 Bulgarian companies by key AI criteria

The graphic matrix represents an analytical assessment on a 5-point scale (1 = low level, 5 = very high level), prepared on the basis of publicly available information for each company. The matrix is of a comparative nature and

serves to visualize the overall picture. Therefore, the most important conclusion is not which company “uses AI the most”, but which company uses it in the most manageable, strategically relevant and organizationally sustainable way. This question is the real subject of benchmarking. If we are looking for an example of deep product integration – this is Payhawk; for AI in the revenue-generating core of banking is TBI bank; for controlled institutional implementation – DSK Bank; for formalized corporate identity of AI – Sirma Group and for practical digitalization and operational efficiency – Yettel Bulgaria.

IV. CONCLUSIONS

Integrating AI into management is a strategic necessity for companies that want to remain adaptable, innovative and competitive in the global economy.

The current benchmarking shows that the Bulgarian business environment already offers sufficiently mature examples of companies that use artificial intelligence in a way relevant to strategic management. The differences between the companies are significant, but it is in them that the analytical value of the comparison lies.

Payhawk stands out as the strongest example of deeply embedded AI in the core product and in CFO-oriented processes. tbi bank is a strong example of AI in credit logic, risk and digital growth. DSK Bank shows how a large financial institution can approach AI through digital transformation and governance. Sirma Group demonstrates the most formalized AI identity and the clearest connection between AI strategy, corporate governance, and enterprise capabilities.

The first important conclusion is that the use of AI in Bulgaria is growing rapidly, but still remains below the EU average. The second conclusion is that the most successful companies do not use AI only as a separate tool, but connect it with the management model, control and long-term strategy.

The third conclusion is that different sectors use AI in different ways: fintech and banks use it for risk, financial control and customer service, software companies – as a strategic product, and telecommunications companies – for the digitalization of business processes.

In summary, it can be said that Payhawk, TBI bank, DSK Bank, Sirma Group and Yettel Bulgaria represent a useful set of examples for benchmarking. They describe different but complementary models of using artificial intelligence in the Bulgarian business environment.

More broadly, the analysis shows that artificial intelligence makes a sustainable contribution to strategic management only when it is combined with leadership, governance, organizational adaptation, infrastructure, training and a clear connection to business value. Without these conditions, AI remains a tool; with them, it becomes a strategic resource.

The report is based on publicly available sources and therefore does not include internal (KPIs - Key Performance Indicators), non-public policies, contractual

relationships with model providers or internal assessments of returns. Therefore, some of the conclusions are interpretive and rely on reliable but incomplete public data.

Public visibility of AI results is uneven across companies. Some companies report in more detail on architecture and roles, others on governance framework or product usage. This means that the comparison is strongest along the lines of governance models and leading practices, rather than as a strict quantitative measurement of impact.

ACKNOWLEDGMENTS

The report was funded under Project/Agreement No. NIP2026-11 of the Scientific Research Fund at the Technical University of Gabrovo.

REFERENCES

- [1] D. Petrova, Application of Alternative Approaches for Innovative Technology Obsolescence in Bulgarian Engineering Companies, Environment. Technology. Resources. Rezekne, Latvia Proceedings of the 16th International Scientific and Practical Conference, 2025. Volume IV, pp. 323-327, Online ISSN 2256-070X, ISSN 16915402, DOI: <https://doi.org/10.17770/etr2025vol4.8462>
- [2] N. Nikolova, D. Petrova, Investment Activity of SMEs in the Furniture Industry in the Republic of Bulgaria, Published by RTU PRESS, Environment. Technology. Resources. Rezekne, Latvia Proceedings of the 16th International Scientific and Practical Conference, 2025. Volume IV, pp. 251-256, Online ISSN 2256-070X, ISSN 16915402, DOI: <https://doi.org/10.17770/etr2025vol4.8436>
- [3] T. Rachovski, D. Petrova, Ivanov, I. Automated Creation of Educational Questions: Analysis of Artificial Intelligence Technologies and Their Role in Education, Vide. Tehnologija. Resursi - Environment, Technology, Resources, Volume 2, Pages 465 – 467, 2024, 15th International Scientific and Practical Conference on Environment. Technology. Resources, ETR 2024, Rezekne 27 June 2024 through 28 June 2024, ISSN 16915402, ISBN 978-171389957-0, DOI: <https://doi.org/10.17770/etr2024vol2.8101>
- [4] D. Petrova, N. Nikolova, Innovative Development and Competitiveness of the Industrial Sector in Bulgaria, Published by RTU PRESS, Environment. Technology. Resources. Rezekne, Latvia Proceedings of the 16th International Scientific and Practical Conference, 2025. Volume IV, pp. 297-304, Online ISSN 2256-070X, ISSN 16915402, DOI: <https://doi.org/10.17770/etr2025vol4.8397>
- [5] D. Petrova, N. Nikolova, An., Lengerov, Modeling business process reengineering in the digital era of industry 4.0, 11th International Scientific Conference “TechSys 2022” – Engineering, Technologies and Systems, AIP Conf. Proc. 2980, 070013-1–070013-7; <https://doi.org/10.1063/5.0185275>, Published by AIP Publishing. 978-0-7354-4814-8/\$30.00, pp. 070013-1 to 070013-7, ISSN 0094243X, 15517616
- [6] Nikolova-Minkova, V. Historical development of technologies in the field of Artificial Intelligence, Environment. Technology. Resources. Rezekne, Latvia, Proceedings of the 16th International Scientific and Practical Conference. Volume II, 2025, pp. 243-250, ISSN 1691-5402, Available: <https://doi.org/10.17770/etr2025vol2.8609>
- [7] Nikolova-Minkova, V. Bulgarian and Foreign Patent Activity in Bulgaria and Bulgarian Patent Activity Abroad by Technological Areas and Fields for the Period 2010-2021. – Economic Studies (Ikonomicheski Izsledvania), 32(5), 2023, pp. 82-114R.
- [8] V. Nikolova-Minkova, Bulgarian and Foreign Trademark Activity in Bulgaria and Bulgarian Trademark Activity Abroad for the Period 2000-2019, Economic Studies (Ikonomicheski Izsledvania), 31 (2), 2022, pp. 173-196. Available: https://archive.econ-studies.iki.bas.bg/2022/2022_02/2022_02_09.
- [9] Camp, R. C., Benchmarking: The search for industry best practices that lead to superior performance, ASQC Quality Press, Milwaukee, WI, 1989.
- [10] Camp, R. C., Business Process Benchmarking: Finding and Implementing Best Practices, ASQC Quality Press, Milwaukee, WI, 1995.
- [11] Payhawk: “AI Office of the CFO Delivers Enterprise-Ready AI for Finance Operations” – Official Introduction to AI Agents. [Online]. Available: <https://payhawk.com/blog/payhawk-ai-agents-invoice-collection>; <https://payhawk.com/blog/why-founders-must-rethink-companies-with-ai>. [Accessed: April 01, 2026].
- [12] We report another record growth in 2024. Available: <https://tbibank.com/our-team/>; <https://tbibank.com/newsroom/tbi-bank-ends-2024-with-record-results/> [Accessed: March 12, 2026].
- [13] DSK Bank. Available: <https://dskbank.bg/za-nas/menidzhment>; <https://dskbank.bg/za-nas> [Accessed: March 23, 2026].
- [14] Sirma Group. About the Company [Online]. Available: <https://sirma.com/company/about.html> [Accessed: March 16, 2026].
- [15] Sirma Group. Data and AI Services [online]. Available: <https://sirma.com/services/data-and-ai.html> [Accessed: March 16, 2026].
- [16] Wikipedia. Yettel Bulgaria [Онлайн]. Available: https://en.wikipedia.org/wiki/Yettel_Bulgaria [Accessed: March 13, 2026].