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**AI DRIVERS OF BUSINESS TRANSFORMATION: STRATEGIC
MANAGEMENT, DATA SECURITY, MARKETING**

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ІІІ ДРАЙВЕРИ ТРАНСФОРМАЦІЇ БІЗНЕСУ: СТРАТЕГІЧНЕ УПРАВЛІННЯ, БЕЗПЕКА ДАНИХ, МАРКЕТИНГ

In today's world, where the pace of change and the volume of information grow exponentially, artificial intelligence increasingly becomes a key driver in the profound transformation of business, encompassing its structure, processes, culture, technologies, and business models, ensuring their adaptation to new market conditions, shifts in consumer behavior, or the implementation of innovations. Therefore, this article aims to study AI drivers of business transformation in the areas of strategic management, data security, and marketing. The study highlights the fact that artificial intelligence shapes key drivers of business transformation, enabling business entities to shift from reactive to proactive methods by replacing manual processes with automated ones and general approaches with personalized ones. It has been proven that in strategic management, AI provides intelligent data analytics, predictive modeling, and decision support, making business models more adaptive. Among the key AI drivers in this area, we have identified the following: intelligent analytics, predictive modeling, decision support, and adaptive business models. It has been proven that

in the area of business protection, AI enhances cyber resilience through real-time threat detection, automatic updating of malware databases, and reliable biometric authentication. Among the key AI drivers in this domain, we have identified the following: AI-based cybersecurity, threat identification, data leakage prevention, and biometric security systems. It has been proven that in the area of business promotion, AI provides tools for deep personalization of marketing campaigns, process automation, and accurate prediction of consumer behavior. Among the key AI drivers in this domain, we have identified the following: hyper-personalization, chatbots and virtual assistants, sentiment and emotion analysis, demand forecasting, and real-time advertising optimization. Thus, AI not only optimizes individual aspects of business operations but fundamentally transforms the very principles of business functioning, making it more efficient, secure, and future-oriented. This creates a foundation for future research focused on a deeper exploration of the impact of specific AI drivers on the transformational processes of profit-generating activities across various sectors of the economy.

У сучасному світі, де швидкість змін і обсяг інформації зростають у геометричній прогресії, штучний інтелект дедалі частіше відіграє ключову роль у глибокій трансформації бізнесу — його структури, процесів, культури, технологій та бізнес-моделі — забезпечуючи адаптацію до нових ринкових умов, змін у поведінці споживачів і впровадження інновацій. Відтак метою статті є дослідження драйверів трансформації бізнесу, зумовлених застосуванням штучного інтелекту, у таких напрямках, як стратегічне управління, безпека даних та маркетинг. У межах дослідження підкреслено, що штучний інтелект виступає джерелом ключових драйверів трансформації бізнесу, які сприяють переходу від реактивних до проактивних практик управління, забезпечуючи автоматизацію процесів і впровадження персоналізованих підходів замість універсальних рішень. Доведено, що у сфері стратегічного управління штучний інтелект забезпечує інтелектуальну аналітику даних, прогнозне моделювання та

підтримку ухвалення рішень, що сприяє підвищенню адаптивності бізнес-моделей. Серед ключових ІІІ-драйверів у цьому напрямі виокремлено: інтелектуальну аналітику, прогнозне моделювання, підтримку ухвалення рішень і адаптивні бізнес-моделі. Доведено, що у сфері захисту бізнесу штучний інтелект підвищує кіберстійкість завдяки миттєвому виявленню загроз, автоматичному оновленню баз даних шкідливого програмного забезпечення та надійній біометричній автентифікації. Серед ключових ІІІ-драйверів у цьому напрямі виокремлено: кіберзахист на основі ІІІ, ідентифікацію загроз, запобігання витокам даних і біометричні системи безпеки. Доведено, що у сфері просування бізнесу штучний інтелект надає інструменти для глибокої персоналізації маркетингових кампаній, автоматизації процесів та точного прогнозування поведінки споживачів. Серед ключових ІІІ-драйверів у цьому напрямі виокремлено: гіперперсоналізацію, чат-ботів і віртуальних помічників, аналіз емоцій і настроїв, прогнозування попиту та оптимізацію реклами в реальному часі. Таким чином, штучний інтелект не лише оптимізує окремі аспекти діяльності, а й фундаментально змінює принципи функціонування бізнесу, роблячи його більш ефективним, захищеним і орієнтованим на майбутнє. Це відкриває перспективи для либшого аналізу впливу окремих ІІІ-драйверів на трансформаційні процеси, що визначають прибутковість суб'єктів бізнесу в різних секторах економіки.

Keywords: transformational processes; business operations; decision-making; adaptive business models; real-time advertising optimization.

Ключові слова: трансформаційні процеси; функціонування бізнесу; ухвалення рішень; адаптивні бізнес-моделі; оптимізація реклами в реальному часі.

Problem statement. In today's world, where the pace of change and the volume of information are growing exponentially, artificial intelligence is

increasingly becoming a key driver of profound business transformation — reshaping its structure, processes, culture, technologies, and business model and enabling adaptation to new market conditions, shifts in consumer behavior, or the implementation of innovations. This is due to its ability to analyze large volumes of data in real-time, automate complex processes, and predict future trends. It is worth noting that AI drivers not only optimize operational processes but also fundamentally transform approaches to strategic management, data security, and the development of marketing strategies. Modern business models are increasingly relying on intelligent systems for decision-making, enabling businesses to be more flexible, adaptive, and innovative.

The implementation of intelligent technologies opens up new horizons for companies seeking to remain competitive in a rapidly evolving world while effectively addressing the challenges of the digital age. This is especially important in the context of increasing cyber threats and the need for personalized marketing strategies that meet the expectations of modern consumers. Artificial intelligence is becoming a tool for automation and a foundation for shaping the future business landscape, where success depends on the ability to adapt and anticipate changes swiftly.

Analysis of research and publications. The phenomenon of artificial intelligence (AI) is rapidly capturing the attention of scientists and practitioners worldwide, becoming a key focus of research across various fields. Of particular interest is its implementation in business activities, where this process is transforming data security, operations management, decision-making processes, and customer service.

The issue of applying artificial intelligence and its impact on various fields is actively studied by numerous researchers. Among them, notable works include those by N. Bolkvadze, O. Bratko, O. Myhal [1], L.V. Tokar [5], D. Pchelyanskyi, and S. Voinova [4]. The research of these scholars, on the one hand, lays the scientific foundation for understanding and further developing AI as a powerful

tool for business transformation. On the other hand, they often do not clearly define the specific set of AI drivers that directly guide such transformations.

Identifying these key drivers will enable businesses to purposefully implement AI to achieve their strategic goals.

Formulation of the article's objectives. The purpose of this article is to examine the AI drivers of business transformation in the areas of strategic management, data security, and marketing.

The paper main body. Within the scope of this study, the term "drivers" is used in a technical and metaphorical sense. Thus, in practical terms, AI drivers of business transformation are interpreted as key practices that artificial intelligence provides to change operational characteristics and revise core aspects of strategic management (including strategic decision-making, strategic planning, and business model management), business protection (including detection, prevention, and response to enterprise information security threats), and business promotion (including personalization, automation, and prediction of consumer behavior).

The structural diagram of AI drivers of business transformation is shown in Fig. 1.

Based on the presented structural diagram of AI drivers of business transformation, it is evident that, in essence, they enable businesses to shift toward proactive methods, replace manual processes with automated ones, and substitute general approaches with personalized solutions. Such transformation opens new horizons for efficiency, adaptability, and competitiveness through the following operational features: increased effectiveness and productivity; optimization of operational processes; and improved quality and accuracy of decision-making based on data analytics.

Business management practices (through which AI makes operations more efficient)¹

These practices include:

Strategic decision-making, specifically data analysis encompassing market trends, competitor behavior, and internal metrics to identify patterns and forecast future events;

Strategic planning, including modeling various development scenarios, assessing potential impacts of changes in the external environment, and recommending the best paths to achieve strategic goals;

Business model management involves analysis of the effectiveness of different components of the business model, identifying bottlenecks, and proposing innovative approaches to creating value for customers.

Business protection practices (through which AI ensures a high level of business security)²

These practices include:

Detection, prevention, and response to enterprise information security threats, including the analysis of network traffic, user behavior, and system logs to identify anomalies and suspicious activities;

Threat prevention, such as automatic blocking of malicious software, detection of phishing attacks, and strengthening the protection of vulnerable systems;

Threat response, including isolating affected systems, removing malicious code, and restoring data, significantly enhancing the organization's cyber resilience.

AI Drivers of Business Transformation

Business promotion practices (through which AI makes business future-oriented)³

These practices include:

Personalization, specifically creating highly personalized marketing campaigns, product recommendations, and offers that significantly increase customer engagement and conversion rates;

Automation, including the automation of various marketing processes such as managing advertising campaigns, email marketing, and customer interactions through chatbots;

Predicting consumer behavior, using machine learning algorithms to analyze historical data and current trends to forecast customers' future actions and needs.

Fig. 1. Structural diagram of AI drivers of business transformation

Note:

1. Systematic approaches, methods, processes, and actions used by managers and teams to effectively plan, organize, control, and motivate resources to achieve the strategic and operational goals of the enterprise.
2. A set of measures, methods, and strategies aimed at ensuring the security of the enterprise, its assets, information, personnel, and reputation from various threats and risks.
3. A combination of strategies, methods, and tools aimed at promoting a company's products or services, attracting new and retaining existing customers, and increasing brand recognition in the market.

Source: compiled based on [1; 5-6]

Regarding practices such as strategic decision-making, planning, and business model management, the following have been identified as key AI drivers of business transformation [2-3]:

1. Intelligent Analytics – the use of artificial intelligence to process large volumes of data in order to identify trends, risks, and new business opportunities.
2. Predictive Modeling – the creation of simulations for potential enterprise development scenarios and the selection of optimal strategic decisions based on the resulting models.
3. Decision Support – the application of AI systems to provide automated, data-driven recommendations to executives, enhancing the accuracy and speed of strategic management.
4. Adaptive Business Models – dynamic adjustment of business processes and models to current market conditions through AI, enabling the enterprise to respond swiftly to changes in the external environment.

The outlined AI drivers fundamentally transform traditional management approaches. In particular, they shift the focus from reactive practices to proactive ones, replace manual processes with automated systems, and substitute general approaches with personalized solutions. Ultimately, these changes are aimed at a complete overhaul of conventional business management methods, paving the way for a more efficient, agile, and competitive future (see Table 1).

AI drivers of business transformation enable companies to develop more effectively, adapt to changes, and remain competitive in the digital age. For example, instead of waiting for a problem to arise and then reacting to it (a reactive approach), an AI-based system can analyze large volumes of data and predict potential risks in advance (a proactive approach) [1]. At the same time, instead of traditional manual data collection and processing, AI automatically performs analysis and generates personalized recommendations for each department or manager, significantly increasing operational efficiency.

Table 1. AI Drivers transforming traditional management approaches

Field of application	Nature of transformation	Outcome of application
Intelligent analytics*	Provides deep insights into market conditions, consumer behavior, and internal processes through the analysis of big data.	Strategic decisions are based not on intuition but on validated analytical insights, reducing the risk of errors and strengthening the justification of actions.
Predictive modeling**	Enables companies to simulate various development scenarios and assess the consequences of each before actual implementation.	Increased flexibility and predictability of strategy, lowering the likelihood of strategic miscalculations, making the business more resilient to changes.
Decision support ***	AI tools automate the search for alternatives, risk assessment, and the generation of recommendations for management.	Significant reduction in decision-making time and improved accuracy, enabling faster action than competitors.
Adaptive business models****	AI ensures automatic adjustment of business processes and management strategies in response to changes in the external environment (demand, competition, regulations).	The business loses inertia, becoming more agile and capable of real-time self-regulation, which is a key advantage in unstable conditions.

Note

* This involves using AI algorithms for analyzing information and detecting patterns.

** This involves using algorithms to forecast events and analyze historical data.

*** This involves using AI algorithms to generate recommendations and analyze options for making effective data-driven decisions..

**** This involves using AI algorithms to automatically adjust business processes and strategies based on shifts in the market environment and customer behavior

Source: compiled based on [2-3]

Practices for detecting, preventing, and responding to enterprise information security threats include the following AI drivers [3; 6]:

1. AI-based cybersecurity (real-time detection of anomalies in network activity).
2. Threat identification (automatic updating of threat databases and detection of new attack types).
3. AI for data leak prevention (monitoring and controlling the exchange of confidential information).
4. Biometric security systems (facial recognition, voice recognition, and behavioral patterns).

The above-mentioned drivers transform traditional approaches to operational security management according to the specifics outlined in Table 2.

Table 2. AI drivers for detecting, preventing, and responding to enterprise information security threats

Field of application	Nature of transformation	Outcome of application
AI-Based Cybersecurity*	Real-time detection of anomalies in network activity	Timely detection of cyberattacks and risk minimization.
Threat identification **	Automatic updating of threat databases and detection of new attack types	Enhanced protection against the latest cyber threats.
AI for data leak prevention***	Monitoring and controlling the exchange of confidential information	Prevention of unauthorized access and data loss.
Biometric security systems****	Facial recognition, voice recognition, behavioral patterns	Improved authentication levels and reduced access risks.

Note

* This is the use of machine learning algorithms, deep learning, and other AI technologies.

** This is the use of AI algorithms to detect potentially dangerous or malicious activity within an information system.

*** This is the use of AI technologies to detect, monitor, and block unauthorized access to or transmission of confidential information.

**** This is the use of AI algorithms to identify or authenticate a person.

Source: compiled based on [3; 6]

These technologies significantly enhance business security and facilitate the rapid response of its subsystems to modern cyber threats. For example, an AI-based cybersecurity system can instantly detect and block unusual network activity, preventing potential attacks before they cause harm.

Automatic updating of databases to expand the range of known threats enables timely response to new types of malicious software, while biometric systems provide reliable user authentication, preventing unauthorized access to confidential data.

Practices for transforming customer interaction methods through personalization, automation, and consumer behavior prediction include the following AI drivers [3-4; 6]:

1. Hyper-personalization (individualized offers based on behavioral analytics).

2. Chatbots and virtual assistants (24/7 customer service and support).
3. Sentiment and emotion analysis (recognition of message tone and customer reactions).
4. Demand forecasting (AI models predicting purchasing activity).
5. Real-time advertising optimization (automatic adjustment of campaigns based on consumer behavior).

These drivers are shaping the future of marketing by transforming traditional methods of customer interaction and creating a more personalized, dynamic, and effective communication process (see Table 3).

Table 3. AI drivers for shaping the marketing of the future

Field of application	Nature of transformation	Outcome of application
Hyper-personalization*	Individualized offers based on customer behavior analysis	Increased customer engagement and loyalty
Chatbots and virtual assistants**	Automated 24/7 customer support	Improved service quality and reduced costs
Sentiment and emotion analysis ***	Recognition of message tone and customer reactions	Better adaptation of communication to the audience's emotional state
Demand forecasting****	Use of AI models to predict purchasing activity	Optimization of inventory and marketing strategies
Real-time advertising optimization*****	Automatic adjustment of advertising campaigns according to consumer behavior	Enhanced efficiency of advertising expenditures

Note

* This involves algorithms analyzing user behavior, such as viewing history, purchases, clicks, and time spent on a page.

** This involves algorithms analyzing user text (input) to recognize intent and keywords.

*** This involves algorithms analyzing text (posts, reviews, comments) for the presence of positive, negative, or neutral emotions.

**** This involves algorithms analyzing historical sales data, seasonality, and external factors (holidays, weather, trends).

***** This involves algorithms that analyze in real-time the user's identity, activities, and interests.

Source: compiled based on [3-4; 6]

The use of AI drivers is transforming the marketing landscape of the future. For instance, online retailers like Amazon and certain Ukrainian marketplaces are employing hyper-personalization systems. These systems analyze users' browsing

history, purchase history, visit frequency, and other behavioral data to tailor the shopping experience. Based on this information, AI generates personalized product recommendations, tailored emails, and special offers. As a result, users receive relevant proposals at convenient times, significantly increasing the likelihood of purchase. This enhances the customer experience and also improves the effectiveness of marketing campaigns, and boosts sales performance.

AI optimizes individual aspects of business operations and fundamentally transforms the core principles of how businesses function, rethinking their main practices and approaches.

First, AI makes business more efficient. It can analyze vast amounts of data at high speed and with great accuracy, uncovering patterns and insights that are beyond human capability.

Second, AI systems can identify anomalies in real-time, predict attacks before they occur, and automatically respond to them, minimizing potential damages.

Third, AI makes business future-oriented. Thanks to predictive modeling and its ability to learn, AI enables companies not just to react to market changes but to anticipate them proactively.

Conclusions. Artificial intelligence shapes the key drivers of business transformation, enabling organizations to shift from reactive to proactive methods, replacing manual processes with automated ones, and general approaches with personalized solutions.

In strategic management, AI provides intelligent data analytics, predictive modeling, and decision support, making business models more adaptive. Among the key AI drivers in this area, we identify: intelligent analytics, predictive modeling, decision support, and adaptive business models.

In the field of business protection, AI enhances cyber resilience through real-time threat detection, automatic updating of malware databases, and reliable biometric authentication. Among the key AI drivers in this area, we highlight: AI-based cybersecurity, threat identification, data leak prevention, and biometric security systems.

In the field of business promotion, AI provides tools for deep personalization of marketing campaigns, process automation, and accurate prediction of consumer behavior. Among the key AI drivers in this area, we identify: hyper-personalization, chatbots and virtual assistants, sentiment and emotion analysis, demand forecasting, and real-time advertising optimization.

Thus, AI not only optimizes individual aspects of operations but fundamentally transforms the principles of business functioning, making it more efficient, secure, and future-oriented. This allows us to identify a promising direction for further research and a deeper study of the impact of specific AI drivers on the transformational processes of profit-generating activities of business entities across various economic sectors.

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