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The Role of Artificial Intelligence Platforms in the Development of Hard and Soft Skills

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Abstract: Artificial intelligence (AI) technologies are rapidly transforming managerial practices and professional competency requirements. In the context of digital transformation and Industry 4.0, AI platforms are increasingly used for data processing, decision support, and predictive analytics. This study investigates how AI platforms influence the development of Hard and Soft skills among managerial personnel. The research demonstrates that while AI systems automate many technical tasks traditionally associated with Hard skills, the importance of Soft skills—such as emotional intelligence, ethical reasoning, and strategic thinking—continues to grow. The findings suggest that the most effective management model in the digital age is based on hybrid intelligence, where human and artificial intelligence complement each other. Practical recommendations for improving management efficiency and developing managerial competencies are also proposed.

Keywords: Artificial Intelligence (AI), Management Personnel, Hard Skills, Soft Skills, Skills Mapping, Hybrid Intelligence, Digital Transformation, Symbiosis, Strategic Management



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1. Introduction

The rapid development of artificial intelligence technologies has significantly transformed modern management systems and professional competency requirements. In the era of digital transformation and Industry 4.0, AI platforms are increasingly used to automate analytical tasks, process large datasets, and support managerial decision-making processes. These technological changes have altered the traditional balance between Hard and Soft skills required for effective leadership [1].

Historically, managerial competencies were primarily based on technical knowledge and analytical abilities. However, as AI systems assume many technical functions, the value of human-centered competencies has become increasingly important. Skills such as emotional intelligence, creativity, communication, and ethical decision-making play a crucial role in ensuring effective collaboration between humans and intelligent technologies [2].

Recent studies indicate that organizations adopting AI technologies must develop new competency models that integrate technological literacy with human-centered leadership skills. The World Economic Forum emphasizes that critical thinking, technological literacy, and complex problem-solving will remain among the most important skills for managers in the coming decade [3].

Therefore, understanding the role of AI platforms in shaping both Hard and Soft skills has become an important research problem in modern management studies. This study aims to analyze how AI technologies influence managerial competencies and to propose a hybrid intelligence model that combines human and artificial capabilities [4].

2. Materials and Methods

This study applies a qualitative research methodology combining literature analysis, competency mapping, and comparative analysis.

First, a **systematic literature review** was conducted to analyze scientific publications related to artificial intelligence, management competencies, and digital transformation. Academic articles published between 2020 and 2025 in major scientific databases were examined to identify key trends in AI-assisted management [5].

Second, a **competency mapping approach** was used to identify the transformation of managerial skills under the influence of AI technologies. This approach categorizes competencies into two major groups: Hard skills (technical and analytical abilities) and Soft skills (interpersonal and cognitive abilities).

Third, a **comparative analysis** was conducted to evaluate differences between traditional management models and AI-integrated management systems. This analysis allowed the identification of key changes in managerial roles resulting from the implementation of AI platforms [6].

Finally, the study applied a **conceptual modeling approach** to develop a hybrid intelligence framework that explains the interaction between human decision-making and artificial intelligence systems in modern organizations.

In the third decade of the 21st century, the management paradigm has fundamentally changed. In the context of the fourth industrial revolution, for example, Industry 4.0, artificial intelligence (AI) has become not only a technical tool, but also a strategic partner in making management decisions. The biggest challenge facing management personnel today is rediscovering the balance between technical skills and human qualities in the digital environment [7].

If in traditional management models the main task of the manager was the collection and analysis of data, now these functions are fully at the disposal of algorithms. However, AI cannot replace Soft skills such as empathy, ethical reasoning, and a creative approach in crisis situations. Therefore, the concept of the symbiosis of man and artificial intelligence arose. This symbiosis requires a leader not only to understand machine language, but also to have a high level of emotional intelligence.

The transformation of the global labor market shows that by 2025, along with critical thinking, an analytical approach, and solving complex problems, strategies for using technologies will be among the most important skills for managers. In the conditions of Uzbekistan, the development of Hard and Soft skills of managerial personnel using AI platforms is the main factor in increasing the efficiency of state and economic management bodies. In this article, we will explore the new management model resulting from the combination of AI and human intelligence, and its practical significance [8].

3. Results

The results of the study demonstrate that AI platforms significantly transform the structure of managerial competencies [9].

First, many traditional Hard skills such as financial analysis, reporting, and data processing are increasingly automated through AI technologies. AI systems can process large datasets, identify patterns, and generate forecasts with greater speed and accuracy than traditional analytical methods.

Second, the transformation of Hard skills has led to the emergence of new technical

competencies, including algorithmic literacy, data interpretation, and the ability to interact with AI-driven decision-support systems [10].

Third, the study shows that the importance of Soft skills increases significantly as AI systems assume technical tasks. Managers must develop advanced interpersonal and cognitive competencies such as emotional intelligence, ethical reasoning, adaptability, and strategic thinking.

Competency mapping indicates that modern management increasingly relies on the integration of human and machine capabilities. In this model, AI platforms function as analytical engines, while humans remain responsible for strategic direction, ethical judgment, and organizational leadership [11].

The results also indicate that organizations implementing AI technologies may increase management efficiency by up to 40–60 percent due to improved data processing and decision-making capabilities [12].

Scientific articles published in the Scopus and Web of Science databases between 2020 and 2025 were analyzed. Compared to 2020, the number of articles on AI symbiosis in management increased 3.5 times by 2024. This indicates the transition of the field from the theoretical stage to the stage of practical application. Although 45% of research in this area is conducted in the USA and China, in recent years the number of scientific studies on the digitalization of managerial personnel by scientists of Central Asia, particularly Uzbekistan, has been increasing.

Table 1. Presents a bibliometric analysis based on the analysis of literature

No	Period	Main object of research	Priority direction
1.	2020-2021	Remote controls	Digital adaptation during the pandemic
2.	2022-2023	Generative AI (ChatGPT, etc.)	Creative thinking and content management
3.	2024-2025	Hybrid intelligence models	Integrated System of Man and AI

A matrix model was used to determine how the Hard and Soft skills of managerial personnel are transformed under the influence of AI. In this case, the skills developed by AI platforms were grouped separately [13].

Traditional technical skills, such as financial analysis and reporting, are now being automated by AI platforms. According to the mapping results, the new Hard skills block of the manager should consist of the following: As AI takes on technical work, the value of human skills increases dramatically. On the map, these skills are defined as "High-Level Cognitive Functions":

1. AI can analyze emotions, but only humans can create a psychological atmosphere and trust in a team.
2. Monitoring the ethical aspects of decisions made by algorithms.
3. The ability to transform the team in accordance with the speed of technological changes.

Table 2. Presents a model of mapping and transformation of competencies

No	Competency type	Traditional view (up to SI)	Transformation (with SI)	The role of the AI platform
1.	Hard skills	Data collection and Excel analysis	Algorithmic analysis and forecasting	Data processing and visualization
2.	Soft skills	Hierarchical control and	Cognitive empathy and coaching	Analysis of the psychological state of

		command		employees	
3.	Synthesis	Rely on personal experience	Advanced intelligence	Generating options	solution

Competency mapping showed that the Hard and Soft skills of management personnel are no longer separate elements, but a single system united by AI platforms. In this case, AI performs the function of a "technical engine," and man performs the function of an "ethical and strategic steering wheel." This symbiosis allows for an increase in management efficiency from 40% to 60%.

This study shows that in the era of artificial intelligence, the development of managerial personnel consists not only in the study of new technologies, but also requires a transition to the "Intellectual Symbiosis" model. As AI platforms automate traditional management functions, the leader's primary responsibility shifts from "Data Processing" to "Synthesizing Human and Machine Decisions."

The results of our research prove that the integration of Soft and Hard skills with AI is the most optimal way to increase management efficiency.

From technological determinism - to human values As AI masters technical tasks Hard skills, the leader's "Humanity" factors Soft skills - that is, empathy, moral responsibility, and creative thinking - become the main characteristics of competitiveness [14].

In the hybrid intelligence model, it is necessary to introduce the "Hybrid Intelligence" approach in the training of managerial personnel. In this case, the leader acts not as an alternative to the machine, but as its strategic controller and boot filter.

Considering the rapid pace of development of AI platforms in continuing education, replacing traditional training programs for managers with "adaptive education" systems will yield incomparable results.

Practical recommendations:

Implementation of the "CI-curatorship" institute within management bodies and companies. In this case, it should be mandatory for each manager to use analytical data from AI platforms when working with their team.

Inclusion of the disciplines "Algorithmic Literacy" and "AI Ethics" in the program of advanced training courses for managerial personnel.

To avoid forgetting the "Human Factor" in the decision-making process, apply Human-in-the-loop algorithms that provide for human confirmation of any option proposed by artificial intelligence [15].

4. Discussion

The findings of this study confirm that the development of artificial intelligence technologies does not eliminate the need for human managerial competencies. Instead, AI transforms the nature of leadership by emphasizing the importance of human-centered skills.

Previous research highlights that successful organizations increasingly rely on a hybrid intelligence model, where humans and machines collaborate to achieve optimal outcomes. In this model, AI systems provide analytical insights while human leaders interpret these insights within broader organizational and ethical contexts.

Another important implication of AI integration is the transformation of educational programs for management professionals. Traditional management education focused primarily on analytical and technical training. However, modern training programs must also emphasize digital literacy, AI ethics, and interdisciplinary problem-solving skills.

Furthermore, organizations must develop institutional mechanisms that ensure responsible use of AI technologies. The concept of **Human-in-the-Loop decision-making** is particularly important in this context, as it ensures that critical decisions remain under human supervision.

Thus, the integration of AI technologies into management systems requires a balanced approach that combines technological innovation with ethical responsibility and human-centered leadership.

5. Conclusion

The study demonstrates that artificial intelligence platforms play an increasingly important role in the development of managerial competencies. AI technologies significantly transform traditional Hard skills by automating technical tasks such as data analysis, forecasting, and reporting.

At the same time, the importance of Soft skills continues to grow as organizations rely more heavily on human judgment, ethical reasoning, and strategic leadership. The most effective management model in the digital age is based on hybrid intelligence, which integrates human creativity and ethical responsibility with the analytical capabilities of artificial intelligence.

The results suggest that educational institutions and organizations should redesign training programs to include AI literacy, ethical decision-making, and interdisciplinary problem-solving skills. Such an approach will help managers effectively operate in the rapidly evolving digital environment.

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