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## THE ROLE OF ARTIFICIAL INTELLIGENCE IN OPTIMIZING AND AUTOMATING MANAGEMENT PROCEDURES IN OLYMPIC AND PROFESSIONAL SPORTS

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**Key words:** *AI, artificial intelligence, professional sport, Olympic sports, sports management, automation, management in sports.*

In the given scientific inquiry, the problem of utilizing artificial intelligence tools for optimizing and automating management processes in professional and Olympic sports management is examined. Considering the realities, managers of sports clubs, public organizations, and professional sports associations often juggle coaching and managerial duties, leading to compromised task execution due to time constraints and excessive paperwork. It has been identified that managerial work demands continuous education and enhancement of personnel management skills, encompassing not only quality control of duties performed by sports association or club members, but also personnel selection, adaptation, training, initiation, and implementation of cutting-edge technologies and work methods. A significant portion of these

tasks can be delegated to artificial intelligence processing, which, when properly utilized, can alleviate managers from 60% of paper and routine work, resulting in even more precise and thorough automation. Consequently, managers would have more time to focus on managerial tasks requiring indispensable human qualities, experiential wisdom, and interpersonal communication.

This approach is particularly pertinent to sports management, as sports managers are the professionals who amalgamate professional work skills with athletes, coaches, parents, governmental representatives, and investors. The invaluable experience and expertise of sports managers significantly influence the development and deepening of Ukrainian and global sports.

By characterizing methods of utilizing artificial intelligence tools in professional and Olympic sports management processes, strategies for optimization in sports management were examined to analyze and identify ways to enhance working conditions for sports managers, especially in professional and Olympic sports. The objective is to create conditions for the development of domestic and international sports, optimizing the performance of coaches and personnel in sports associations and public organizations.

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## ВИКОРИСТАННЯ ШТУЧНОГО ІНТЕЛЕКТУ ДЛЯ ОПТИМІЗАЦІЇ ТА АВТОМАТИЗАЦІЇ УПРАВЛІНСЬКИХ ПРОЦЕСІВ В ОЛІМПІЙСЬКОМУ ТА ПРОФЕСІЙНОМУ СПОРТІ

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**Ключові слова:** *ШІ, штучний інтелект, професійний спорт, олімпійський спорт, спортивний менеджмент, автоматизація, менеджмент в спорті.*

У цій даній науковій розвідці розглянуто проблему використання інструментів штучного інтелекту для оптимізації та автоматизації управлінських процесів у спортивному менеджменті професійного й олімпійського спорту. Адже, зважаючи на реалії, керівники спортивних клубів, громадських організацій та асоціацій дуже часто поєднують тренерську й управлінську роботу, що завжди позначається на якості виконуваних обов'язків через брак часу та надлишок паперової роботи. Було виявлено, що управлінська робота вимагає постійної освіти та поліпшення навичок управління персоналом, що передбачає не тільки контроль якості виконуваних обов'язків членами асоціації чи клубу, а й відбір і пошук персоналу, його адаптацію, навчання, ініціювання й імплементацію новітніх технологій і методів роботи тощо. Більша частина з перелічених вище завдань може бути передана на опрацювання штучному інтелекту, який за належного та доцільного використання може на 60% звільнити менеджера від паперової та рутинної роботи, яка в разі автоматичного опрацювання буде виконана ще більш точно та ретельно, а менеджер матиме більше часу для виконання тих управлінських завдань, де потрібні саме незамінні людські якості, живий досвід і спілкування. Доведено, що цей підхід є особливо актуальним для менеджменту в спорті, адже, як уже зазначалося, саме спортивний менеджер є тим спеціалістом, що поєднує в собі навички професійної роботи зі спортсменами, тренерами, батьками, представниками державної влади та інвесторами та має той безцінний досвід, від розвитку й поглиблення якого залежить майбутнє українського і світового спорту.

Через характеристику способів використання інструментів штучного інтелекту в управлінських процесах професійного й олімпійського спорту нами було розглянуто стратегії оптимізації у сфері спортивного менеджменту з метою аналізу та виявлення способів покращення умов роботи спортивних менеджерів, особливо у сфері професійного й олімпійського спорту, для створення умов для розвитку вітчизняного та міжнародного спорту, оптимізації роботи тренерів і персоналу спортивних об'єднань та громадських організацій.

**Formulation of the problem.** In the realm of professional sports, the emphasis invariably revolves around luminous personalities, facilitating their self-expression and attainment of peak performance. The discernment, acknowledgment, and orchestration of such endeavors typically fall upon the discerning eye and acumen of sports managers. These individuals possess a background in sports, enabling them to make informed decisions, foster unique connections, and curate distinctive products that epitomize the essence of the sporting realm. However, the exigencies of reality often impose burdensome paperwork and mundane tasks that do not necessitate the expertise of such individuals.

To address this challenge, artificial intelligence (AI) emerges as a viable solution. The diverse array of AI tools facilitates the effective automation of all management processes. AI exhibits the capacity to learn, extrapolate insights, and mitigate inaccuracies to a far greater extent than humans. Furthermore, it can adeptly process vast volumes of information, categorizing it in accordance with specified parameters. Consequently, AI contributes significantly to enhancing the efficiency of human labor and optimizing management processes within the sporting domain.

The issue of enhancing the efficiency of sports management has remained pertinent over numerous years, drawing the attention of both domestic and international scholars. This enduring interest is exemplified notably in the research endeavors of V. Bilohur (2018–2020) [1, 8], G. Cucui (2013) [2], and V. Marcua (2014–2016) [7]. However, the integration of artificial intelligence (AI) into this domain represents a novel approach to organizing operational procedures. Despite being already employed in various other sectors, the adoption of AI within the realm of sports management is met with apprehension due to its novelty. Nevertheless, its implementation and adaptation within existing operational frameworks are relatively straightforward.

Consequently, **the objective of the study** was to analyze and ascertain the role of artificial intelligence in streamlining and optimizing management processes within professional and Olympic sports. Additionally, it aims to foster the adoption of AI tools within the domain of sports management.

**Results of the research and discussion.** Society, along with all business processes, is constantly changing, and the field of management and effective interaction with personnel requires rapid and adequate

adaptation to these processes. After all, the driving force has always been and remains people, professionals whose potential and skill are too valuable to be wasted on routine tasks. The sports industry is no exception, especially since it deals with individuals whose work is associated with maximizing the physical potential of the human body, its development, and finding ways to unleash it. Like no other, this field requires innovative approaches not only to athlete training and the preparation of qualified coaching staff, but also sports management today demands optimization and automation aimed at simplifying work processes, freeing up valuable human potential to address complex profile issues [5].

Therefore, analyzing modern trends in business management, large-scale objects, and, in particular, human resources and highly qualified personnel, we observe that automation through the use of artificial intelligence is actively used in such areas as:

- Personnel recruitment and tracking of candidates with specific skill sets: automated systems can screen resumes based on predefined criteria, schedule interviews, and conduct initial screenings.

- Onboarding and adaptation: a clear automated structure simplifies document management, streamlines and speeds up the adaptation of new team members, autonomously assigning tasks and modules for adaptive learning to new employees, personalizing the learning experience, and creating individual development programs, ensuring continuous development of both new and existing personnel and knowledge transfer [9].

- Employee data management: the use of centralized databases (HRIS) automates data entry, storage, and retrieval, reducing the number of errors that arise from manual entry and ensuring data accuracy and compliance.

- Feedback and productivity: setting goals for each workday, week, month, and so on; automated performance evaluation systems that eliminate false results or external interference, including real-time performance assessment and comprehensive feedback.

- Time tracking: specialized human resource management tools that provide accurate information on attendance and hours worked, as well as the ability to effectively manage leave in the most user-friendly manner—via a mobile application or other biometric system.

- Consulting and analytics: automation enables human resources professionals to generate useful information based on vast amounts of personnel data using analytics and reporting tools, greatly simplifying the process of making personnel decisions [3].

From a sports management perspective, it's crucial to recognize that automation represents a strategic partnership between technology and human

expertise. Its primary aim is to empower individuals within the sports industry to engage in more innovative endeavors, while simultaneously alleviating them from mundane tasks and potential burnout. Undoubtedly, the advent of automation is reshaping the skill sets required of sports professionals and restructuring job roles, albeit with some initial discomfort due to the need for a paradigm shift in training and leveraging individual potentials. However, it's becoming increasingly evident that automation is proving to be a highly efficient means of optimizing operations within the realm of sports management [2].

In the context of sports management, the implications of automation on internal processes are profound:

1. Elimination of repetitive tasks: automation streamlines and removes redundant, inefficient, and repetitive tasks, thereby significantly liberating resources within sports organizations.

2. Management of systems and emotional intelligence: as automation assumes routine tasks, there is a heightened demand for skills such as critical thinking, creativity, adaptability, emotional intelligence, and effective management of automated systems among sports professionals.

3. Continuous learning: a critical aspect of effective sports management involves fostering a culture of continuous learning among staff. Consequently, investments in employee training are poised to yield significant returns, enhancing employee retention rates.

4. Development of communication skills and self-awareness for enhanced interaction with technology: sports management professionals responsible for overseeing automated systems must possess strong communication skills and self-awareness to facilitate effective interaction. This necessitates a new level of interpersonal communication within sports organizations [6].

From the perspective of sports management, preparing personnel for the upcoming challenges of automation is essential. Automation is an inevitable aspect of modernization, driven by the recognition that human resources are finite. Moreover, it's widely acknowledged that working diligently is distinct from working efficiently, a realization that valuable employees may struggle to reconcile due to various factors. However, to ensure that the integration of automation does not lead to widespread resistance among employees, a comprehensive training approach is necessary. This approach should encompass the development of technical, cognitive, and interpersonal skills, particularly given the increasing prevalence of artificial intelligence and other optimization tools. As these technologies continue to evolve through human interaction, new challenges and tasks are on the horizon [4].

In navigating the realm of automation, it's crucial to prioritize the following technical skills:

- Proficiency in Automation Tools: Employees should receive extensive training in utilizing automation tools, software, and technologies relevant to their organization's operations. This includes data analysis tools, robotic process automation (RPA) platforms, machine learning algorithms, programming languages, and more.

- Digital Literacy: Basic computer skills must now encompass an understanding of software applications, cloud computing, cybersecurity, data privacy, and adherence to basic security protocols.

- Cross-Training: Practical application of technical knowledge is vital. Therefore, training programs should integrate various technical areas, simulate real-life scenarios, and foster an appreciation for automation's role in routine tasks, thus cultivating a holistic approach to problem-solving [2].

As for the cognitive skills for the future, important are the following:

- 1) Critical Thinking and Problem-Solving: curricula should emphasize critical thinking, logical reasoning, and problem-solving skills, encouraging employees to approach automation tasks strategically and creatively.

- 2) Adaptability to Learning: a culture of continuous learning must coincide with the ability to embrace change, ensuring that professional development aligns with the latest automation technologies and business requirements.

- 3) Data Literacy: the ability to interpret and process data is essential. Employees should be equipped with the skills to derive insights from analytics, thereby enhancing work performance [5].

In a technologically advanced workplace, the quality of relationships becomes paramount for efficiency and optimization. Therefore, the development of interpersonal skills is crucial, including:

- Emotional Intelligence: self-awareness, empathy, and relationship management are vital for navigating interpersonal dynamics amidst automation.

- Teamwork and Collaboration: encouraging knowledge-sharing, fostering cross-functional cooperation, and promoting collective problem-solving enhances the effectiveness of automation processes.

- Leadership and Management: leaders must guide teams through the challenges of automation, foster innovation, and drive organizational change to

ensure successful integration and adaptation to technological advancements [7].

**Conclusions.** In the modern sports management, the integration of automation heralds profound implications for internal processes and professional development. Automation represents a strategic alliance between technology and human expertise, aimed at empowering individuals within the sports industry to engage in more innovative endeavors while alleviating them from mundane tasks. This partnership necessitates a paradigm shift in the skill sets required of sports professionals, emphasizing the importance of technical proficiency, cognitive adaptability, and interpersonal communication.

Automation streamlines operations by eliminating repetitive tasks, liberating resources within sports organizations for more value-added activities. However, it also underscores the need for enhanced cognitive skills, such as critical thinking and problem-solving, to navigate complex automation systems effectively. Moreover, continuous learning becomes imperative to keep pace with evolving technologies, necessitating investments in employee training and development.

From a technical perspective, proficiency in automation tools and digital literacy are paramount, enabling sports professionals to leverage technology for optimal performance. Cross-training further enhances problem-solving abilities, fostering a holistic approach to automation tasks.

On the cognitive front, critical thinking, adaptability, and data literacy emerge as indispensable skills for navigating the complexities of automation. These skills empower sports professionals to derive meaningful insights from data analytics, driving performance improvements within the organization.

Interpersonal communication plays a pivotal role in maximizing the benefits of automation, fostering collaboration, and effective teamwork. Emotional intelligence equips individuals to navigate interpersonal dynamics amidst automation, while leadership and management skills are essential for driving organizational change and innovation.

In summary, as automation reshapes the landscape of sports management, a multifaceted approach to professional development becomes imperative. By cultivating technical proficiency, cognitive adaptability, and interpersonal skills, sports organizations can harness the full potential of automation while fostering a culture of innovation and efficiency.

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