

BOOK REVIEW

Artificial Intelligence and Robotics in the Sports Industry: From Qualitative Recommendations to Implementation Gaps

Hossein Abdolmaleki

¹Department of Sport Management, Ka.C.,
Islamic Azad University, Karaj, Iran

Correspondence

Corresponding author Hossein Abdolmaleki.
Email: h.abdolmaleki@kiaiu.ac.ir

Abstract

This book review critically examines Ekaterina Glebova's *Artificial Intelligence and Robotics in Sports Industry: Past, Present, and Future* (CRC Press, 2026) through the lens of AI implementation management. While the book offers a timely and accessible overview of AI applications across coaching, athlete training, fan engagement, and stadium operations, it also presents several limitations that reduce its utility for implementation-focused scholars and practitioners. The review identifies five critical gaps: the absence of a political-economy perspective on how AI can reinforce existing power asymmetries; neglect of non-elite sport and the digital divide; oversimplification of organizational resistance and human-AI conflict; reliance on non-peer-reviewed sources and limited empirical evidence; and the raising of ethical questions without sufficiently actionable governance responses. The review concludes that the book is a valuable starting point for early-stage AI adoption but does not provide step-by-step implementation frameworks, systematic lessons from failure, or sufficiently concrete guidance for resource-constrained organizations. For researchers contributing to the special issue on AI implementation, the review highlights future directions including maturity models, return-on-investment frameworks, implementation-failure studies, data-governance mechanisms, and research on responsible implementation in resource-constrained sport organizations.

KEYWORDS

artificial intelligence implementation; sports management; human-machine collaboration; digital divide; organizational resistance; ethical AI

1 | WHY THIS BOOK MATTERS IN THE AGE OF AI TRANSFORMATION

The intersection of artificial intelligence, robotics, and the sports industry has rapidly evolved from a futuristic possibility into a present-day reality. From video-assistant-referee systems officiating football matches to wearable sensors monitoring athletes' physiological signals, the technological transformation of sport is undeniable. Yet within this wave of innovation lies a profound managerial challenge: how can organizations move beyond technological hype and implement these technologies in ways that are effective, ethical, equitable, and sustainable?

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In *Artificial Intelligence and Robotics in Sports Industry: Past, Present, and Future*, Glebova (2026, Chapter 1, p. 4) directly addresses this challenge. Published in 2026 at what the author calls a "tipping point" for sport, the book aims to provide clear frameworks for the responsible adoption of AI and robotics across the sports ecosystem. Unlike many texts that either celebrate technology uncritically or resist it nostalgically, Glebova seeks to bridge theory and practice through a human-centered approach to digital transformation.

This review evaluates the book specifically through the lens of implementation, the central theme of this special issue of *Management Research Quarterly*. While acknowledging the book's significant contributions, the review identifies critical gaps that limit its utility for managers and scholars seeking actionable, evidence-based guidance. In doing so, it situates Glebova's work within broader research on technology implementation, organizational change, and ethical AI governance. Implementation should not be understood as a purely

technical deployment problem. Research on AI implementation shows that technology-centered approaches can overlook hidden work, hidden costs, organizational resistance, and unintended consequences that shape implementation outcomes (Monod et al. 2023). Moreover, AI implementation is embedded in organizational power relations: seemingly neutral implementation practices can redistribute visibility, authority, and control among organizational actors (Lissillour and Monod 2024).

2 | THE ROADMAP THE BOOK OFFERS

Glebova structures the book as a journey from historical origins through present applications to future scenarios. For the implementation-focused reader, four thematic areas are particularly relevant.

2.1 | Coaching and Performance: From Intuition to Data-Driven Strategy

The book argues that AI is fundamentally reshaping the coaching profession. No longer reliant solely on experience and intuition, modern coaches increasingly work alongside predictive analytics platforms, machine-learning dashboards, and AI-powered video-analysis tools. Systems such as TacticAI and Zone7 illustrate how AI can support prediction of opponent movements, injury risk assessment, and tactical decision-making (Glebova 2026, Chapter 1, pp. 7–9; Chapter 2, p. 59). Glebova presents coaching as an emerging hybrid role—part strategist, part data interpreter, and part psychologist—in which success depends on integrating algorithmic insights with human judgment.

2.2 | Athlete Training and Rehabilitation: Precision, Prevention, and Personalization

The book provides detailed examples of how wearable technologies, biometric sensors, and predictive injury models are transforming athlete preparation. Eliud Kipchoge's sub-two-hour marathon is presented as a landmark illustration of human-machine symbiosis, in which data and technological systems supported pacing, shoe design, and environmental optimization. The use of smart helmets in American football and cycling similarly illustrates how real-time impact monitoring can contribute to injury prevention (Glebova 2026, Chapter 1, pp. 10–11; Chapter 4, pp. 93–94). Across these examples, the book emphasizes hyper-personalization: training programs increasingly tailored to athletes' physiology, biomechanics, and recovery patterns.

2.3 | Fan Experience: Immersion, Interactivity, and Personalization

The book explores how augmented reality, virtual reality, and AI-generated commentary are transforming passive spectators into more

interactive participants. Examples including FC Barcelona's second-screen applications and the NBA's virtual-reality courtside experiences illustrate how technology can deepen fan engagement (Glebova 2026, Chapter 1, pp. 17–22; Chapter 3, pp. 66–68). At the same time, the book recognizes a tension between personalization and collective fandom: when each spectator receives a personalized version of the event, the shared ritual of live sport may become more fragmented.

2.4 | Operations and Event Management: The Invisible Infrastructure

Behind the scenes, AI and robotics are streamlining activities ranging from ticketing and security to crowd-flow prediction and energy management. Smart stadiums such as Tottenham Hotspur Stadium and Mercedes-Benz Stadium in Atlanta are presented as models of intelligent and more sustainable infrastructure that integrates IoT sensors, predictive maintenance, and dynamic pricing (Glebova 2026, Chapter 1, pp. 24–25; Chapter 3, pp. 86–88). Glebova argues that these operational applications, while less visible than player tracking or immersive fan experiences, may ultimately have substantial implications for organizational efficiency and environmental sustainability.

Recent work co-authored by Glebova extends this implementation-oriented perspective. Juma et al. (2026) propose a digitally enabled framework for fan-zone sustainability that combines real-time sensing and digital twins with governance mechanisms addressing data privacy, stakeholder coordination, and standardization. This illustrates how technological applications in sport can be connected more explicitly to the organizational and governance arrangements required for implementation.

3 | CRITICAL ANALYSIS: STRENGTHS AND FUNDAMENTAL WEAKNESSES

3.1 | Strengths

The book's most significant strength is its practical orientation and emphasis on human-machine collaboration. Chapter 6, "From Vision to Implementation," represents a genuine attempt to move beyond theoretical abstraction. Glebova provides actionable insights for coaches, sport scientists, managers, and entrepreneurs, including frameworks for evaluating feasibility, ethical impact, and scalability. Her emphasis on knowing when to trust data and when to rely on professional judgment resonates with the broader organizational-change literature, which has long recognized that technology adoption is as much a cultural and organizational project as a technical one.

The author also demonstrates sensitivity to implementation challenges that are often overlooked in techno-optimistic accounts. She acknowledges the technology-access gap between wealthy and resource-constrained organizations, the risk of algorithmic bias reproducing existing inequalities, and the importance of contextual sensitivity. These issues are woven throughout the book, particularly in Chapter 7.

Furthermore, the book is theoretically ambitious. It draws on sociomateriality, actor-network theory, and postphenomenology to explain how technologies become entangled with practices, actors, and experience (Glebova 2026, Chapter 1, pp. 31–35). This theoretical breadth elevates the book above technological journalism and gives it a foundation for engaging with scholarly debates about digital transformation.

3.2 | Fundamental Weaknesses and Limitations

Despite these strengths, the book has several structural and methodological limitations that constrain its value for implementation-focused scholars and practitioners.

First, the political economy of AI and organizational power remains underdeveloped. The book acknowledges inequality of access, but it does not systematically analyze how AI and robotics can reinforce rather than reduce existing power asymmetries. Works such as O'Neil (2016) and Noble (2018) demonstrate how algorithmic systems may reproduce inequality even when presented as neutral or efficiency enhancing. In sport, this raises questions about whether predictive systems entrench the dominance of wealthy clubs, how data ownership transfers value between athletes and organizations, and whether AI-driven scouting can systematically exclude talent from underrepresented regions and communities. The question of who benefits is therefore not ancillary to implementation. Lissillour and Monod (2024) show how AI implementation strategies are embedded in organizational power dynamics, drawing attention to unequal capacities to shape technological arrangements and their consequences. Questions about who owns data, who can challenge algorithmic recommendations, and who defines legitimate performance criteria should consequently be treated as implementation questions rather than secondary ethical concerns.

Second, non-elite sport and the digital divide receive insufficient attention. The book focuses primarily on professional sport, including the Olympic Games, FIFA, the NBA, the Premier League, and elite college athletics in the United States. This focus is understandable because advanced applications often emerge in resource-rich environments, but it leaves a large domain underexamined. Grassroots clubs, schools, community programs, and organizations in developing economies face fundamentally different resource constraints. The book identifies the problem but offers limited discussion of scaled-down technologies, low-cost alternatives, technology-transfer mechanisms, or subsidized access. As a result, it leaves unresolved the question of how resource-constrained organizations can participate in an AI-driven sports landscape without widening existing inequalities.

Third, the treatment of human complexity and organizational resistance is too harmonious. The human-machine collaboration framework is attractive, but AI implementation often generates conflict, resistance, and unintended consequences. Coaches may perceive algorithmic recommendations as threats to professional autonomy; athletes may resent being reduced to data points; medical staff may distrust predictive injury models; and data scientists may clash with traditional scouts over recruitment decisions. These tensions concern authority, legitimacy, and the redistribution of decision rights between humans and algorithms, not merely generic resistance to change. Monod (2025) shows that acceptance of AI-based supervision cannot be reduced to instrumental usefulness because power asymmetries, algorithmic opacity, bias, workplace culture, and technostress can turn apparent acceptance into compliance or resistance. Post-implementation research likewise suggests that actors do not simply accept or reject technologies. Wang (2024) shows how actors confronted with conflicting institutional logics may selectively couple new systems with existing practices, producing hybrid arrangements through delegation and bricolage. AI implementation in sport should therefore be examined as an ongoing process of negotiation, adaptation, and reconfiguration rather than as a straightforward transition toward human-machine collaboration.

Fourth, the evidentiary base relies heavily on non-peer-reviewed examples. The book is rich in cases and illustrations, but many are drawn from news reports, corporate websites, promotional materials, and informal case studies. There is comparatively limited engagement with peer-reviewed evidence on implementation outcomes, including success and failure rates, cost-benefit analyses, and longitudinal organizational effects. This choice is understandable for a book written for a broad audience, but it becomes more problematic when the objective is to provide evidence-based implementation guidance. From an evidence-based-management perspective (Rousseau 2006), inspiring examples cannot substitute for systematic evaluation of what works, under which conditions, for whom, and at what cost.

Fifth, the ethical questions are more developed than the governance mechanisms proposed to address them. The book raises important questions about fairness, ownership of athlete data, and the effects of code-based decision-making, but provides limited guidance on the organizational processes through which competing values and stakeholder claims should be negotiated. Sahut et al. (2023) conceptualize AI ethics in terms of alternative forms of deliberation and contestation, suggesting that ethical AI cannot be reduced to static principles. At a more operational level, Chapuis and Guégan (2024) argue that responsibility must be actively enabled among those who design, develop, implement, operate, and use AI-based systems. Responsible AI implementation therefore requires not only ethical principles but also allocated responsibilities, appropriate capabilities, and mechanisms through which competing claims can be surfaced and negotiated. Glebova raises many of the right questions (Glebova 2026, Chapter 7, pp. 163–183), but the organizational mechanisms required to address them remain underdeveloped.

4 | CONCLUSION: A STARTING POINT, NOT A DESTINATION

Artificial Intelligence and Robotics in Sports Industry: Past, Present, and Future is a valuable and timely contribution to the emerging literature on technology implementation in sport. Its emphasis on human-machine collaboration, sensitivity to ethical challenges, and practical orientation distinguish it from purely technocentric or purely theoretical accounts. For scholars, students, and practitioners in the early stages of considering AI adoption, the book provides an accessible overview of the technological landscape (Glebova 2026, Chapter 8, pp. 187–198).

However, the professional reader should approach the book with a clear awareness of its limitations. It does not provide a step-by-step quantitative implementation framework for managers, draws no systematic lessons from implementation failures, gives insufficient attention to the political economy of AI and the dynamics of organizational resistance, and raises ethical questions without fully specifying the governance processes through which difficult trade-offs can be addressed.

For researchers contributing to this special issue, Glebova's book is therefore best treated as a starting point rather than an endpoint. Future research should bridge the gap between qualitative recommendations and concrete managerial needs by developing maturity models for AI adoption, return-on-investment frameworks that include financial and non-financial outcomes, and empirical case studies of genuine implementation failures rather than only celebrated successes. Research should also examine how resource-constrained organizations can participate in AI-enabled sport without being left further behind. Taken together, these directions shift the unit of analysis from AI technology itself toward the organizational infrastructure of implementation: the power relations, work practices, governance mechanisms, capabilities, and outcome measures through which AI becomes embedded in organizational life.

5 | FUTURE RESEARCH AND DEVELOPMENT DIRECTIONS

Despite the valuable insights the book offers regarding AI and robotics applications in sport, the field remains marked by significant research gaps that define a clear agenda for scholars, practitioners, and policy-makers.

First, AI-adoption maturity models for sports organizations require further development. Such models could enable clubs, federations, and other stakeholders to assess organizational readiness for advanced technologies and identify sequential steps for moving from experimentation to broader integration. These frameworks should account for technical capacity, organizational culture, financial resources, and stakeholder preparedness rather than impose a single implementation pathway. Importantly, maturity should not be conceived solely as progress along a technical adoption scale. The concept of responsible transformation

infrastructures developed by Chebeň (2026) suggests a broader perspective in which successful transformation depends on interconnected systems of governance, organizational routines, digital architectures, legitimacy mechanisms, learning processes, and capabilities. Applied to sport, this perspective could shift AI maturity models from measuring how much technology an organization has adopted toward assessing whether it possesses the organizational infrastructure required to implement that technology responsibly and sustainably.

Second, research on return-on-investment frameworks for sports technologies is needed. Clubs, federations, and investors require transparent metrics to evaluate investments in AI systems, including injury reduction, performance gains, fan-experience enhancement, and longer-term outcomes such as loyalty and brand equity. Without such frameworks, adoption decisions may remain speculative rather than evidence based. **Third, genuine implementation failures deserve systematic study.** Existing accounts disproportionately emphasize success stories and can therefore obscure the structural, cultural, and human factors that cause technology projects to stall or fail. Research on failed or suspended implementations could yield important lessons concerning resistance to change, inadequate training, misaligned incentives, unrealistic technical expectations, and poor stakeholder engagement.

Fourth, resource-constrained organizations and developing communities should become a central research setting rather than a peripheral concern. Research is needed on how costly technologies can be scaled and adapted for local clubs, schools, community programs, and developing economies. Collective funding arrangements, public-private partnerships, technology-transfer mechanisms, shared digital infrastructure, and open-source alternatives may provide ways to reduce the digital divide in sport.

Fifth, governance frameworks that protect athletes' data rights against commercial exploitation represent an immediate research frontier. Legal and ethical frameworks must balance innovation with privacy, autonomy, and dignity. Participatory governance involving athletes, clubs, federations, fans, and technology providers may offer a promising direction for designing legitimate decision-making processes.

Finally, the psychological and social consequences of AI require interdisciplinary attention. Continuous monitoring and algorithmic feedback may affect motivation, self-confidence, athlete identity, mental health, coach-athlete relationships, trust, and communication within teams. Addressing these issues requires collaboration among sport scientists, psychologists, sociologists, philosophers, management scholars, and engineers.

Pursuing these research directions would not only bridge the gap between qualitative recommendations and concrete managerial needs but could also contribute to a fairer, more human-centered, and more sustainable sporting future. If these gaps can be addressed, sport may remain not only smarter but also more equitable and more human in the age of artificial intelligence. Glebova has opened the door; the research community must now determine how best to walk through it.

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socio-cultural influences on sport consumption, Financial Fair Play in professional football, and anti-marketing strategies related to doping prevention.

AUTHORS BIOGRAPHY

Hossein Abdolmaleki is an Associate Professor of Sport Management at Islamic Azad University, Karaj Branch, Iran. He holds a PhD in Sport Management from Ferdowsi University of Mashhad and an MA in Sport Management from the University of Tehran. His teaching and research focus on sport management, sport marketing, digital sport ecosystems, esports, consumer behavior, and governance in sport. His recent work examines the role of emerging digital technologies in sport, including blockchain, fan tokens, NFTs, and digital fan engagement. He has also studied sports co-branding, sponsorship,