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Digital Transformation in Professional Sport: A Case Study of Artificial Intelligence Integration in a German Second-Division Ice Hockey Club

CASE STUDY

Jannik Stockfisch^{a*} and Andrea Cuthrell^{b+}

^aSchool of Business and Innovation, Barton College, Wilson, NC, USA

^bOffice of Academic and Career Planning, Barton College, Wilson, NC, USA

*Student author, +Faculty mentor

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Abstract

Artificial Intelligence (AI) is no longer a futuristic concept only used in elite-tier global sports franchises; it has become a fundamental operational tool for professional sports organizations at all levels (TFL, n.d.). This case study examines the digital transformation of a second-division German ice hockey club through the lens of a marketing and operations internship. The organization uses a diverse AI strategy, including engagement analysis through automated marketing systems (Forbes Technology Council, 2025), performance optimization with tracking data (Panchal & Singh, 2025), and strategic scouting through data-driven recruitment (Vuorenmaa, 2025). Through the use of design tools, automated newsletters for sponsor analysis, and tactical video software, the club shows how mid-sized enterprises can attain efficient operations (LBS, 2026). Important insights suggest that the success of AI depends on striking a balance between human insight and fast processing capabilities (TFL, n.d.). Nevertheless, such a shift calls for organizational preparedness and strong data protection policies (Vuorenmaa, 2025; Asiabar et al., 2025). The enterprise represents how AI operates as an online assistant,

allowing human workers to focus on creativity and strategy in a highly competitive sporting setting (TFL, n.d.; Vuorenmaa, 2025).

Introduction

The international sports industry is currently witnessing a significant transformation, with the AI sports market expected to grow to roughly \$30 billion by 2032 (TFL, n.d.). AI will eventually become an essential component of sports, and its implementation will be crucial for organizations to stay ahead of their competition. While most of the academic literature and articles focus on the top-tier level, such as the NFL or English Premier League, the real importance of AI is presented in mid-tier professional leagues where resources are tight, and efficiency is essential, because it shows what a difference AI can make (Vuorenmaa, 2025). At this level, the implementation of new systems must be well-calculated and bring benefits to the organizations in the near future (PwC, 2024, as cited in Vuorenmaa, 2025). This case study focuses on a German second-division ice hockey club to show how AI integration changes sports management from the front office to the locker room.

Artificial Intelligence in this context is defined as technology that simulates human learning, problem-solving, and decision-making (TFL, n.d.). In the organization, AI is applied across five key areas: strategy and tactics, talent recruitment, fan engagement, health and performance, and design (TFL, n.d.). In these areas, AI is used in different ways and for different purposes, but in the end, it is to make work more efficient. For a club that is fighting for promotion back to the top level, these technologies provide a major advantage over competitors relying on traditional, slower methods, since not all teams across the league are at the same stage of this restructuring process (TFL, n.d.; Vuorenmaa, 2025). This research shows the organization's change, highlighting how AI leads to deeper fan connections, streamlines sponsorship management, and enhances athletic performance and health through predictive analytics (Forbes Technology Council, 2025; Panchal & Singh, 2025). High performance in all these areas is essential to bring the best results on the ice and lead the club back to success.

Context and Background

The organization is a founding member of the German Hockey League (DEL) and has a significant history with both championships and financial restructuring. After the last restructuring, the club is currently competing in the second German Hockey League (DEL2), where they are in the playoffs fighting for promotion, which shows the organization's high ambitions. The club operates as a for-profit professional sports organization, focusing on high-level ice hockey and entertainment. Under its new owner, who took over the club as well as the team's multi-purpose arena, in 2021, a major responsibility of the organization is not just to market the hockey team but also the arena for other events, like concerts. Since the new owner took over the organization, there has been a visible change from a traditional club towards a more modern approach to set the foundation for future success (TFL, n.d.; Vuorenmaa, 2025). Focusing on the hockey team, the organization has a business model centered around three major revenue streams: ticket sales, regional sponsorship partnerships, and merchandise

sales, with ticket sales and sponsorship deals being the major portion of it (Vuorenmaa, 2025).

The stakeholder landscape of the organization is complex and directly related to the performance on and off the ice. Primary stakeholders include the owner, loyal and supportive fans, and a network of regional sponsors who use the club as a platform to showcase their products. The fans and sponsors have a major impact on the organization's success, which is why their satisfaction is a major priority for the club to drive engagement and boost loyalty (Forbes Technology Council, 2025; Vuorenmaa, 2025). The organization employs a mix of full-time administrative staff, including marketing, management, and finance, as well as professional athletes and a specialized and diverse coaching team.

All these stakeholders must work hand in hand to succeed in an environment of high emotional visibility and performance pressure (Vuorenmaa, 2025). In professional sports, one wrong decision can cost success and millions of dollars, making data-driven decision-making essential (Vuorenmaa, 2025). In past years, the organization implemented major changes, including the renovation of the arena to make room for more fans and the expansion of the marketing and management staff to work more efficiently.

The club also prioritized a digital transformation, utilizing AI as a "strategic tool" to redefine how the sport is coached and managed (LBS, 2026). This allows the club to bridge the gap between its second-division resources and its first-division ambitions through the intelligent use of data (Vuorenmaa, 2025). These changes are not just made to reach short-term success but to ensure the organization remains long-term sustainable on the highest level while safeguarding athlete well-being (Asiabar et al., 2025; Panchal & Singh, 2025).

Case Description

During a five-week internship in the marketing department during the winter of 2025-2026, I directly experienced how Artificial Intelligence (AI) is influencing the organization's work (TFL, n.d.). The workload was mostly divided into three major sectors: sponsorship management, event planning, and digital content creation. It also became evident that AI was also used by the coaching staff for tactical analysis, performance monitoring, and scouting issues (TFL, n.d.; Vuorenmaa, 2025).

The marketing department utilized AI-powered design tools, specifically Canva's AI assistants, ChatGPT, and Google Gemini, to handle repetitive tasks such as background removal and merchandise layouts. While the creative ideas still originated from humans, AI acted as a "virtual assistant" that helped handle the "heavy lifting" of design to create final products for social media (TFL, n.d.). This significantly reduced the time needed and improved the quality of social media content and website materials (TFL, n.d.). To manage the sponsoring network, the organization also implemented an automated engagement system for a newsletter. This system helped create content in advance and send it at specific times using a scheduled send-out option. The manager of the marketing department noted that professionals should develop an understanding of how to use AI tools effectively and in a balanced manner for specific use cases (L. Thier, personal interview, 2026).

More important than the scheduling option is the AI tracking that created statistics on who and how many sponsors opened and engaged with the newsletter (Forbes Technology Council, 2025). For the marketing

department, it is extremely important to see which sponsors are invested in the product to secure sponsorship renewals (Forbes Technology Council, 2025). As noted by another employee, analytics tools for reach measurement and trend analysis are already essential and will be even more critical in the future (T. Kurtz, personal interview, 2026).

Beyond marketing, the coaching staff implemented AI into game preparation. Computer-vision-based video analysis is used to get data-driven insights on other teams, such as attacker shot locations or goalie save percentages, which allows for a more objective evaluation of the game (LBS, 2026). This technology reads the game pixel by pixel, providing objective tactical patterns while eliminating human subjectivity (LBS, 2026). This allows players to work on specific save routines and helps coaches develop game-day strategies based on win probabilities and historical performance data (TFL, n.d.; LBS, 2026).

The medical and athletic staff used wearable trackers to monitor biometrics like heart rate, distance skated, and time on ice (TFL, n.d.). These tools are part of a broader trend toward precision healthcare in sports (TFL, n.d.). Through analysis of these datasets, it is possible for medical personnel and athletic trainers to foresee future injury risk and performance degradation, and make better decisions concerning player rotation and rest periods (Panchal & Singh, 2025; Asiabar et al., 2025). It should be noted that in fast-paced environments, this is a crucial element toward extending an athlete's career (Panchal & Singh, 2025). Research findings suggest that the AI models used can predict performance with 85-90% accuracy and minimize overuse injuries by 20-30% (Panchal & Singh, 2025).

Another area where artificial intelligence has had an important impact is rostering, where organizations have used a data-driven method to scout for players (Vuorenmaa, 2025). This is achieved through scouting platforms using analyzed data via AI, thus making it possible to access statistical information for thousands of athletes to find those that match the criteria of a team (TFL, n.d.). While the scouting process eliminates bias, finding the right mix of both AI models and human judgment is key to making good recruiting decisions (Vuorenmaa, 2025; TFL, n.d.).

Analysis

In the organization, there is the usage of artificial intelligence in various departments as for varying purposes. A critical area in this case is that AI is a benefit and assistant, and not a replacement for human judgment (TFL, n.d.; Vuorenmaa, 2025). As the sources indicate and based on the experience during the internship, modern sports professionals must act as a bridge between AI insights and human intuition to use these tools to the organization's benefit (TFL, n.d.; Vuorenmaa, 2025). For the organization, this was applicable in the marketing department, where AI handled the "heavy lifting" of data processing and design interaction, while the staff was able to focus on high-level creativity, community engagement, and relationship building with sponsors (TFL, n.d.; Vuorenmaa, 2025). However, an understanding of how AI works and the risks associated with it, such as algorithmic bias, is essential to ensure it does not influence operations negatively (Vuorenmaa, 2025; Asiabar et al., 2025). This is one of the reasons that the manager of the marketing department emphasized that basic technology knowledge is already a professional requirement (L. Thier, personal interview, 2026).

It can be concluded that the successful implementation of AI at the DEL2 level is possible through a combination of three elements: commitment from the leadership, strong strategy, and knowledge of technology (Vuorenmaa, 2025). The organization demonstrated the commitment under the new ownership as it has shown a desire to shift its processes and methods from traditional to more modern and digital ones (TFL, n.d.; Vuorenmaa, 2025). Such commitment is crucial, considering that while tradition plays a significant role in sports, there is a need for organizational change in order to maintain competitiveness and viability (Vuorenmaa, 2025). Using a phased process makes it possible to introduce more advanced technologies to the work process without interfering with ongoing operations (Vuorenmaa, 2025). Thus, introducing advanced technological progress to the organization prevents it from falling behind because of the unwillingness to adopt innovations (Vuorenmaa, 2025).

The use of wearables to collect biometric and personal data raises the ethical issue of data privacy (Asiabar et al., 2025; Vuorenmaa, 2025). Considering the fact that the information being collected through the system can be classified as sensitive, the organization should have strong legal regulations, such as GDPR, to protect the data of both the organization and the athletes (Asiabar et al., 2025; Vuorenmaa, 2025). Therefore, it is crucial to use such data exclusively for the purposes of helping the athletes and protecting it from unauthorized access (Panchal & Singh, 2025; Asiabar et al., 2025). Since safety through law takes the highest priority, the organization needs to consult specialists who would evaluate such AI-based solutions and create a proper framework (Asiabar et al., 2025).

Implications and Conclusion

The case study of this second-division ice hockey club proves that the transition to AI-supported operations is not exclusive to world-elite organizations (Vuorenmaa, 2025). For clubs at the DEL2 level, AI provides a critical competitive advantage in a fast-paced market and a crowded entertainment landscape (Vuorenmaa, 2025). These findings offer broader lessons for future sports professionals, highlighting that small to mid-sized organizations can benefit from AI to minimize administrative burdens and close the gap with the top tier in terms of efficiency (Vuorenmaa, 2025). AI also assists these clubs in scouting global talent and analyzing opponents without the need for massive budgets (LBS, 2026; Vuorenmaa, 2025). Another major benefit is the ability to create a personalized fan experience through automated newsletters and interactive social media, which deepens the connection with fans—the primary economic driver for sustainability (Forbes Technology Council, 2025; TFL, n.d.).

In conclusion, this organization's journey shows that data-driven decision-making has become the new standard for professional sports organizations at all levels (TFL, n.d.; Vuorenmaa, 2025). While the human narrative and the unpredictability of play remain the heart of hockey, AI provides the analytical skeleton that supports the club's athletic and economic goals (TFL, n.d.). As technology evolves, organizations must adapt, and individuals entering the sports market should be prepared to bring specific skills in AI and new technology to the table to help their organizations succeed (Vuorenmaa, 2025; TFL, n.d.).

References

- Dig Watch. (2026, February 6). *AI drives bold change with five technologies at Milano Cortina 2026*. Digital Watch Observatory. <https://dig.watch/updates/ai-drives-bold-change-with-five-technologies-at-milano-cortina-2026>
- Ghorbani Asiabar, Mojtaba; Ghorbani Asiabar, Morteza; & Ghorbani Asiabar, Alireza. (n.d.). *Ethical implications of artificial intelligence in predicting sports injuries and protecting athlete privacy*. Preprints.org – The Multidisciplinary Preprint Platform. <https://doi.org/10.20944/preprints202511.1681.v1>
- Kunert, Jessica. (2020, July 10). Automation in sports reporting: Strategies of Data Providers, software providers, and media outlets: Article. *Media and Communication*, 8(3). <https://www.cogitatiopress.com/mediaandcommunication/article/view/2996>
- LBS. (n.d.). *Artificial vision in sport: Beyond var and hawk-eye*. Laliga Business School: Mbas, Masters and Sports Courses, Liga de Fútbol Profesional. Retrieved 2026, from <https://business-school.laliga.com/en>
- Panchal, Maynak; & Singh, Manish. (2025). Artificial intelligence in sports analytics for performance enhancement and injury prevention. *International Journal of Innovative Research and Creative Technology*, 1–15. <https://www.ijirct.org/viewPaper.php?paperId=2503052>
- TFL. (n.d.). G42: The future of sport and AI. The Future Laboratory. <https://www.tiffin.edu/wp-content/uploads/Report-Future-of-AI-and-Sport.pdf>
- Vuorenmaa, Henrietta. (2025, May). Artificial Intelligence supporting scouts [Masters thesis]. Jamk University of Applied Science. https://www.theseus.fi/bitstream/handle/10024/893642/Vuorenmaa_Henrietta.pdf;jsessionid=ABD49A7FCA30E8E1DEFBDBE905BEE744?sequence=2
- Wang, Xuelong (2019, June 1). Application of grey relation analysis theory to choose high reliability of the network node. *Journal of Physics: Conference Series*, 1237(3). doi:10.1088/1742-6596/1237/3/032056