

A Business Software Alliance Initiative



Al in – Sports

Beyond the Game: Al, Sports, and Digital Transformation

Sports—playing them, watching them, winning them provide not only entertainment but also have a substantial, positive impact on the global economy. According to <u>Global</u> <u>Sports Insights</u>,¹ the sector has global revenues of \$2.65 trillion, making it the ninth largest industry on earth. And artificial intelligence (AI) is beginning to have a significant impact. The global market for AI in sports grew from \$5.91 billion in 2023 to \$7.20 billion in 2024, according to <u>Research and Markets</u>.² They expect this figure to reach \$25.95 billion by 2030.

<u>PwC's Global Sports Survey</u>,³ which reflects the views of more than 400 sports leaders from across 46 countries, forecasts 7.3 percent market growth for the next 3–5 years. This will be driven by increased interest in women's sports, continued enthusiasm for global sporting mega-events, and the rise of generative AI. "GenAI offers significant potential for sports organizations to transform what they do and find new growth," PWC wrote. "Yet its adoption and impact remains inconsistent." This report explores three areas where AI can change the game(s).

SECTION 1

Athlete-Centric AI: Enabling teams to transform training, prevent injury, and scout new talent, as well design innovative new equipment for many sports

SECTION 2

Al Efficiency and Sustainability Gains: Streamlining event operations, reducing costs, and supporting sustainability goals for global mega-events and grassroots sports alike

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Fan Engagement: Creating immersive, personalized experiences, reshaping how fans interact with sports

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With unprecedented investment flowing into sports, athletes becoming global figures, and increasing professionalization at every level, the industry is at a crossroads, noted Deloitte's Pete Georgio in his <u>2025 Sports Industry Outlook</u>.⁴ Sporting organizations may need to build stronger back offices, compete for top talent, leverage data and analytics strategically, and develop new organizational competencies—all areas where the digital transformation is crucial. Generative AI could "lend a hand in personalizing fan content feeds, serving up relevant advertising to fan groups, and providing direct (and instant) customer support," Georgio added.

The last hundred years saw the growth of mega-events, including the Olympic and Paralympic Games and the FIFA World Cup. The coming decades will see AI transform the way we watch, play, and judge virtually every type of sporting pursuit. The 2024 Paris Olympics—widely seen as the first games of the AI era—built on the AI Agenda⁵ set out by the International Olympic Committee (IOC), which emphasizes transparency, accountability, and inclusivity.

As the IOC notes in the agenda: "Al technology promises to revolutionize athlete training with hyper-personalized programmes; optimize performance through detailed analysis of athletes' data; transform judging and refereeing with impartial precision; and customize the individual viewing experiences of billions of fans watching worldwide."

This report explores three areas where AI can change the game(s). First, **Athlete-Centric AI**, which shows the breakthroughs new technology can make in training, injury prevention, and talent scouting. It also discusses AI's potential for hyper-personalized coaching, performance analytics, and equipment design, which benefit both professional athletes and amateurs at every level.

Next, it examines **AI Efficiency and Sustainability Gains.** Al and machine learning (ML) are streamlining event operations, reducing costs, and supporting sustainability goals for global megaevents and grassroots sports alike. During play, AI can bring an objective perspective to areas of subjective decision-making—such as impartial judging of gymnastics competitions, line calls in tennis, and deciding when the ball is offside in soccer. Around the game, it can help manage human resources (HR), logistics, and sustainability concerns for the biggest sporting events.

Finally, AI can support a new era of **Fan Engagement.** Technologies like GenAI and predictive analytics are creating immersive, personalized experiences, reshaping how fans interact with sports. For years, sports teams have been using ML to optimize ticket pricing, while leagues have improved scheduling and other operations processes. As <u>PWC notes</u>,⁶ generative AI is highly customizable and can be fine-tuned to recognize new patterns. This can unlock opportunities for teams to create personalized offerings based on fans' individual preferences and deliver them at scale.

The integration of AI into the sports sector has influenced everything from decision-making processes among coaches and athletes to where and how people watch fixtures. These real-life examples from BSA members show how AI is changing the game, for good.

SECTION 1

Athlete-Centric Al

Al can become sports teams' MVP by enabling them to transform training, prevent injury, and scout new talent, as well as design innovative new equipment for many sports. It can also analyze possible outcomes on a scale humans simply can't. From fine-tuning an individual's technique, to designing equipment that maximizes performance, Al offers immense potential to sports worldwide.

Athlete training and recovery has been transformed by the recent dramatic increase in computing power, along with improved reliability and affordability of sensor-equipped hardware. Advances in AI applications, for example, on sensor signals produced by athletes or AI-powered video analysis, deliver new ways to understand and improve athletic performance. An athlete's sensor signals allow sports analytics to go beyond gross activity tracking and aggregates, and to measure key elements of a skill or activity—for example, in <u>winter sports</u>.⁷

DX AT WORK

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DX at Work: The Ultimate Assistant Scout

The scouting team of Spain's Sevilla Football Club (FC) has attracted global attention for its ability to identify rising stars, while pioneering the development of its own data-intensive applications targeted to characterize players based on a wide spectrum of attributes.

IBM and Sevilla FC worked together to build Scout Advisor,⁸ an innovative GenAl tool to support the scouting team. Built on watsonx, IBM's Al and data platform designed for enterprises, Sevilla FC's Scout Advisor will analyze massive amounts of information present in the club's existing databases to evaluate potential recruits. This includes both quantitative data such as height and weight, speed, number of goals or minutes played, and unstructured data such as the textual analysis contained in more than 200,000 scouting reports.



AUTODESK

DX at Work: A Custom Bike, Sustainably

Decathlon is at the front of the innovation peloton with a "vision project" that explores new manufacturing techniques and Al-powered design. The world's largest sporting goods retailer has created a <u>high-performance bicycle with the potential to be custom 3D-printed from aluminum</u>⁹ for each customer.

Decathlon called on the generative-design capabilities of **Autodesk** Fusion 360 software for this project, which uses aluminum to reduce both the raw materials and shipping requirements of this futuristic racing bike. Generative design, the Autodesk technology at the heart of this project, is a form of AI that provides a design engineer hundreds—even thousands—of potential solutions to a given design problem in minutes or hours. Optimized solutions that satisfy requirements are then presented to the designer for consideration.



DX at Work: A Squad, Not Just a Team

Germany's FC Bayern is one of the most successful soccer clubs of all time. The world may focus on the 11 players on the pitch, but just as important to the club's success are more than 1,000 employees in Munich, New York, Bangkok, and Shanghai. Dedicated to innovation, the world-renowned club has extended its usage of <u>SAP SuccessFactors software</u>¹⁰ with Alenabled solutions to enhance its HR functions and processes.

Recognizing the importance of hiring top talent off the pitch as well as on it, FC Bayern will use Al-assisted capabilities in its recruiting process. Now, the talent acquisition team at FC Bayern will be able to create compelling job descriptions—a previously time-consuming and manual task—at the touch of a button, as well as be prompted with Al-generated interview questions based on job descriptions.

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DX AT WORK

Microsoft

DX at Work: AI Goes Surfing...Surfing USA

Born out of a grassroots hackathon project where **Microsoft** engineers worked with USA surfing to develop some basic technical ideas, the squad now has an <u>AI solution that</u> <u>improves performance</u>¹¹ while reducing injuries for athletes. Although it is fascinating to watch and thrilling to do, surfing involves very high-risk maneuvers. "Our job is to ultimately keep the longevity, health, and wellness of the athlete," says Tracy Axel, Director of High-Performance Analytics for USA Surfing.

Using a single camera view on land, the team was able to capture a surfer in motion, using joint mechanics and AI to determine both strengths and deficiencies in their movement. Azure Cognitive Services provides two major benefits for the team: performance and prevention. "Drawing on the rich data insights from thousands of video clips, healthcare professionals, judges, coaches, and surf athletes will benefit from myriad information presented on one platform that can be intelligently interpreted by all in real time," notes Kevyn Dean, Medical Director of USA Surfing.

SECTION 2

Operational Efficiency and Sustainability

From parents trying to understand the scheduling of Little League games to planning and hosting the Olympic and Paralympic Games, sports require next-level organization skills. Al can streamline the process, including event operations, optimizing logistics, reducing costs, and supporting organizers in their quest to meet sustainability goals.

Mega-events, such as the International Cricket Council Cricket World Cup, the Rugby World Cup, and the FIFA World Cup, are at a crossroads, according to Deloitte's <u>2024 Sports Industry Outlook</u>.¹² In a fragmented world, events that bring people together in a spirit of global solidarity and fair play have an inherent value. At the same time, the complexity and cost of these events may be reaching breaking point.

On the pitch or in the arena, AI can help with the trickiest jobs in judging, refereeing, and umpiring. The International Gymnastics Federation and Fujitsu have collaborated on an AI-powered system that combines high-definition cameras and specialized software to provide more <u>accurate and</u> <u>consistent scoring</u>;¹³ it was used to help judge the 2023 Artistic Gymnastics World Championships.

From delivering the snacks to configuring the seating, AI can make every part of the global sports industry flow more smoothly. It can also help sports play their part in taking on the challenge of climate change: for example, AI-driven analytics at the Paris Games not only <u>optimized energy</u> <u>consumption in their eco-stadiums</u>¹⁴ but also informed dynamic public transport schedules.

DX AT WORK

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DX at Work: A Slam-Dunk for the NBA's Digital Strategy

The National Basketball Association (NBA) <u>launched its digital transformation in 2020¹⁵</u> and the subsequent full-court press on digital technologies has revolutionized the fan, player, and team experience. "We're trying to create a truly differentiated basketball experience for our fans," says NBA Chief Technical Officer (CTO) Krishna Bhagavathula, noting the return on investment to date has been significant. "We got about one billion video views this season, which is more than triple last year's total." The NBA partnered with <u>Microsoft and its</u> <u>Azure cloud platform</u>,¹⁶ and has enjoyed a 50 percent growth in subscribers and 52 percent increase in viewership last season, the CTO adds.

The NBA also has a partnership with Hawk-Eye that yields detailed data that will be used by players and teams to improve their play and plan strategies for games. "It essentially uses skeletal tracking technology to evaluate how high an athlete is jumping, their body posture when making a shot or how they land on their ankle," the CTO says. "We think this empirical data will actually unlock insight into basketball."

The 2023–24 NBA regular season was consumed for a total of 762.69 million hours, making it the most-consumed NBA regular season in five years. The data being collected by the new solution is already helping the NBA better understand players' strengths and weaknesses, thus improving their performance.

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DX at Work: If You Build It (With AI), They Will Come

Populous are the architects behind some of the world's most famous stadiums. Soccer club Tottenham Hotspur's Stadium in London, GEODIS Park in Nashville, and the Buffalo Bills' new NFL stadium are just a few examples.

Every venue project—regardless of the budget, sport, or site—is limited by deadlines and the minutiae of fitting spectators, players, concessions, and many other elements into a coherent whole. Al can help, as the Populous Equestrian/Livestock design team found when using the <u>generative-design capabilities in **Autodesk** Dynamo.¹⁷ An architect or designer codes in logic, requirements, and limitations; then, a generative-design program explores a range of solutions, one possibility at a time. By vetting so many options, the program uncovers optimal solutions from infinite variations, a complex process human designers wouldn't have time to fully explore.</u>

"This creates the space for us to provide significant value and innovation in what we deliver for our clients," says Populous Principal Charlie Kolarik. "This leads me to the highest tier of value, which is leveraging our technological capabilities and innovation to help strengthen our market position as trusted advisors to our clients."

DX AT WORK

ORACLE

DX at Work: Formula One Fans in the Driving Seat

Oracle Red Bull is a huge name in Formula One (F1) motor racing, and its focus on sim racing is part of an <u>effort to increase fan engagement</u>¹⁸ and make F1 more accessible to an even larger global audience. Through sim racing, fans can compete with the drivers themselves. "Being fast in a simulation requires an incredibly high level of skill and consistency that is very similar to what is required in real life in Formula One," says Joe Soltysik, esports lead for Oracle Red Bull Sim Racing.

Before each race weekend, one of Oracle Red Bull Racing's championship drivers—Max Verstappen or Sergio Pérez—will do a virtual lap on the racetrack of the upcoming Grand Prix using a simulator, and the team will post that result. The simulator is a racing Playseat that streams 50,000 data points per second of telemetry data through an internet gateway to a virtual machine on Oracle Cloud Infrastructure. Called Oracle Virtual Laps, the program lets gamers compare their lap performance to the world's most talented drivers. That kind of gaming experience can help foster racing fandom—and just maybe, it'll uncover one of the world's next great esports professionals.

SECTION 3

Fan Engagement

Technologies such as GenAl and predictive analytics are creating immersive, personalized experiences, reshaping how fans interact with sports. Globally, the sports industry is growing for several reasons. There is unprecedented interest in watching women play established sports; new sports (particularly esports) are emerging with active, connected fan networks; and the brightest names in the global sporting firmament are inventing new ways to interact with their fan bases. Al is a factor in all three.

The 2023, FIFA Women's World Cup was the <u>most watched women's sports event on the planet.</u>¹⁹ More than 1.7 million tickets were sold, while TV viewing figures broke records everywhere: in the US, 6.43 million fans watched the United States Women's National Soccer Team take on The Netherlands, more than any other previous group stage match in history. And the digital transformation means there are more platforms for fans to watch on: FIFA's own digital platforms saw 2.4 million users visiting FIFA Women's World Cup channels daily.

Al can help new sports grow quickly. Padel, an exciting fusion of tennis and squash, has taken off worldwide in the last decade. In the UK, a <u>collaboration between Deloitte and the Lawn Tennis</u> <u>Association</u>²⁰ created a courtside Al instructor, which served as an interactive guide, providing game tips, educating players about the sport's history, and answering specific questions using an Al text generation model.

And fans can simply get more of what they want. For decades, ESPN has consistently delivered captivating and unique experiences for sports fans. Now, the leading sports media company is pioneering something new—the use of GenAl to increase sports coverage to a wider range of spectators. "Generative Al has the power to deliver more sports to more fans," said Beth Keating, Managing Director at Accenture. "With the ability to provide more content faster, we're enhancing fan engagement and reinventing what sports coverage covers," starting with professional lacrosse and women's soccer, where fans can now access Al-powered ESPN game recaps for their favorite teams.²¹

Finally, there's a clear benefit for sports organizations to increasing fan engagement: according to Deloitte's research, self-described "fanatics" spend <u>six times more than casual fans</u>²² on league-related purchases.

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DX at Work: Real Madrid's Royal Fan Experience

With 500 million fans worldwide, Real Madrid FC is among the world's top sporting brands. Only a small portion of those fans live in Spain, so <u>Real Madrid engaged a Microsoft</u> <u>Services team</u>²³ to envision, develop, and deploy a digital sports platform that takes advantage of the global footprint of Microsoft cloud services to consistently deliver the very best fan experience anywhere in the world.

Real Madrid can now engage one-on-one with fans, implement targeted promotional campaigns, and use data to track and analyze fan behaviors: it's the club's back-office marketing engine. It captures every fan interaction, whether a mobile check-in at the stadium, a profile update on the website, or a merchandise purchase online. Today, club officials report digital revenue growth of 30 percent and could not be more positive about the club's digital future.



DX at Work: Sweet Sweet Fantasy Football

ESPN Fantasy is the number one provider in fantasy sports with a comprehensive portfolio of award-winning games and content serving more than 20 million fantasy players across the web, mobile, audio, linear TV, and streaming video.

<u>ESPN worked with IBM Consulting</u>²⁴ to take their fantasy football app to the next level with the power of AI. Built and maintained with IBM's watsonx AI and data platform, they offer players popular features like the Boom-and-Bust analyses, Trade Grades, and Waiver Grades, all personalized to the needs of players who really want the best fantasy team.



DX at Work: From Court to Caught Up in Three Minutes

To meet the expectations of Golden State Warriors fans around the world, Tom Frenette, Lead Videographer for the Warriors, <u>turned to Adobe to help shoot the team shooting</u> <u>hoops</u>.²⁵ The edit team works natively with Adobe Premiere Pro, so the files flow straight into the software, allowing titles and clip assemblies to be made as quickly as possible. Frame.io presentation links are available to project stakeholders for feedback and sign-off.

Clips can be on basketball fans' social media within three minutes of happening. In the meantime, the original camera files are still available and added to the Frame.io project later. These files can then be used for long-form projects, highlight videos, and sponsorship work.



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DX at Work: AI Serves Tennis Fans Well

Tennis fans have a whole year of Grand Slam tournaments to enjoy, but it can be hard to keep up with big events, with dozens of matches happening faster than Naomi Osaka's serve. Wimbledon's organizers partnered with **IBM** to launch a new feature, <u>"Catch Me Up,"</u> based on watsonx and the IBM Granite model.²⁶

"Catch Me Up gave fans relevant content in the form of short-form stories, before a match and after a match for the Gentlemen's, Ladies' and Wheelchair singles draws," explains Kevin Farrar, IBM's Head of Sport Partnerships UK and Wimbledon Partnership Executive. Drawing on fans' favorite players, their location, and trending stories, it was a great opportunity to offer tennis lovers personalized content, notes Farrar. "Generative AI not only gives you this ability to create personalized content, but also to do so at scale. IBM also brought back its Match Insights, including "Likelihood to Win," which predicted a 61 percent chance of victory for Carlos Alcaraz in the final against Novak Djokovic—the second-year running Likelihood to Win called this correctly.

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DX at Work: Putting the ML Into MLB

The 2023 world champion Texas Rangers have been an MLB franchise since 1972. That's a long time to build history—and a lot of different incoming data streams for fan activity. The Rangers turned to **Salesforce**'s Marketing Cloud Intelligence to unify all their data.²⁷ This gave them flexibility to process MLB's centralized data warehouse and their own social, advertising, and in-person data.

Unifying their data also allowed them to use AI to generate actionable, data-driven insights on their fanbase. "The single view of the fan is important for us because we want to zoom down to granular level," said Jake Radelet, CRM and analytics manager for the Rangers. "It helps us understand what drives individuals to come to the ballpark and engage with our brand." The marketing team can now build more efficient marketing campaigns to boost single-game ticket sales and drive site returns and repeat purchases.

DX AT WORK

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DX at Work: A Hail Mary for Fan Involvement

In 2021, Bobby Gallo, senior vice president of Club Business Development at the NFL, presented data to NFL team owners showing five teams with at least 15,000 unsold tickets on average for the upcoming season. Gallo implored all NFL teams to consider what they could do to improve ticket sales and fan engagement—a problem that not only plagues the NFL, but many professional sports teams around the country. Better use of data and Al can transform the "fan experience" to boost both revenue and the customer life cycle.

<u>Professional sports teams use technologies like **Databricks**²⁸ to improve the in-stadium experience, increase fan engagement, and grow the lifetime value of a fan. Point-of-sale data can determine what fans have previously purchased at the stadium, and combined with demographic data, clubs can create a list of recommended items to purchase for each fan.</u>



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DX at Work: 10,000 Data Points, 1,000 Horsepower, One App

IBM and legendary Formula One racing team Scuderia Ferrari²⁹ are working together to deliver world-class digital experiences for fans through a fully reimagined mobile app to be unveiled during the 2025 season. In F1, each vehicle is producing up to 10,000 data points every second. So it makes sense to apply IBM's technology and consulting expertise to analyze and transform Ferrari's massive volume and variety of data into custom insights for fans.

"Our two companies share values such as the pursuit of excellence...as well as combining our technology and skills to pursue the highest quality and cutting-edge technology," said Lorenzo Giorgetti, Chief Racing Revenue Officer at Ferrari. "The collaboration with IBM will see us offering Scuderia Ferrari HP fans unprecedented experiences that will open the doors of the Scuderia to the outside world, as well as collaborating together on many other fronts to create activations that will generate value for both brands."

Conclusion: Changing the Game at Every Level

Al established its usefulness at the 2024 Olympic and Paralympic Games in Paris. The next steps could transform sports worldwide: For athletes, through hyper-personalized coaching, improved performance analytics, and better talent coaching. For league and event organizers, by streamlining operations, reducing costs, and supporting sustainability goals. And for fans, through creating immersive, personalized experiences that reshape how spectators interact with sports.

With the industry continuing to grow in the face of global headwinds, technology offers teams, fans, and organizers a competitive edge, thanks to Al support. Although it will be up to the humans to go higher, faster, and stronger, continuing the rivalries that captivate audiences worldwide, AI can help them take sporting entertainment to a whole new level.

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