



February 2025

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Foreword

In recent years, there has been exponential growth in the sports tech industry in India and globally. The maturing of the domestic sector has seen the proliferation of technology catering to various stakeholders in sports, including fans, athletes, teams, governing bodies and match officials. Additionally, the potential of technology to enhance outcomes across these areas has caught the attention of the larger ecosystem. Investors, entrepreneurs and major tech companies are actively contributing to the advancement of technology, aiming to help India emerge as a true sporting powerhouse.

The potential for technology adoption in sports is diverse. Technology applications in sports can be broadly classified into two distinct categories: fan engagement and participation and sports performance. While fan engagement and sports media consumption has historically relied on traditional technologies such as satellite and cable broadcasting, recent innovations in digital technologies have proven to be an inflection point in how fans engage with professional sports. Digital modes of consumption and participation, perhaps best exemplified by Fantasy Sports (FS), have opened new avenues for fans to connect with the sport they love. Fandom has long been an expression of passion for many, and technology today amplifies that by creating a more interactive experience for a more informed and thoughtful fanbase. This has resulted in several positive effects, leading to a larger and more loyal following for athletes and teams, which has unlocked more resources for those sports to grow and evolve.

Besides fan engagement, technology has also profoundly impacted sports performance. Given the intense competition,

professional sports have always been a breeding ground for innovation. In a field where even small margins can mean the difference between resounding success and crushing failure, key players constantly seek the next edge. In pursuit of this quest, we are now seeing a paradigm shift where sports technology is no longer an experiment or a vanity project for sports organisations but a foundational layer upon which success is predicated. Today, data and analytics have led to a radical shift in how teams are scouted and trained, revolutionising critical areas such as injury prevention and recovery.

The FS industry has been an early example of sports tech in India and is the quintessential example of digital technology deepening fan engagement. As the forerunner to several sports-tech products available in the market today, its evolution can help provide a roadmap for the broader sector to navigate the challenges to growth. It has played a vital role in educating various factors in the ecosystem on the impact of technology on sport and how private and public sector collaboration can achieve a common aim. As the sector matures, the various stakeholders are taking a more proactive approach to enabling the sector, and the results of this journey are now visible. The recently released Draft National Sports Policy 2024 is a good example of the public sector's forward-thinking approach, as it explicitly focuses on developing sports technology and sports sciences.

This report not only deep-dives into the sports technology sector but also presents an overview of the evolution of the policy and regulatory landscape and provides some insight into the best way forward.



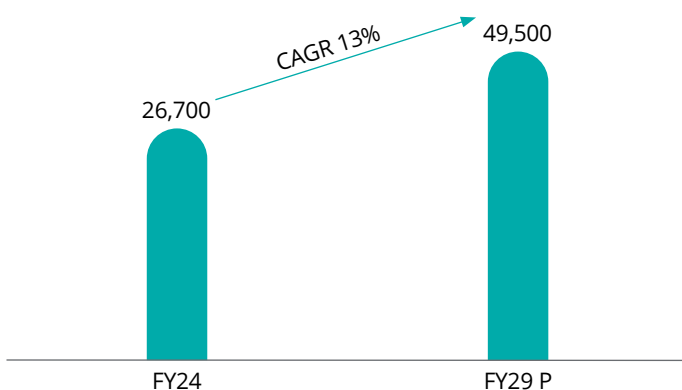
1. Executive summary

The significance of sports is demonstrated by the Hon'ble PM's recent statement, "Our Government is committed to supporting sports and ensuring more youth are able to play and shine," which reflects the government's intent to further develop this sector. This has been further supported by the recently released National Sports Policy 2024, which takes a holistic approach to developing the sports sector in India and gives particular importance to sports technology and sports science as a key driver of the sector going forward. In fact, technology has played a pivotal role in transforming various sectors in India and is increasingly becoming a key growth driver across industries, including sports. India's sports technology market is experiencing rapid growth, generating revenues of INR26,700 crore in FY24. It is projected to reach INR49,500 crore by 2029, registering a Compound Annual Growth Rate (CAGR) of 13 percent.^[1]

The report explores how the sports technology sector uses technology to enhance the overall sports fan experience. It covers various aspects of technology-enabled fan engagement, sports gaming, FS, data and analytics for sports and core technology providers.

About 89 percent of Indian sports fans believe that emerging technologies have enhanced their overall viewing experience, making technology a crucial factor in driving future fan engagement.^[2]

Figure 1: Sports technology market in India (INR crore)^[1]



While the sector is still in its nascent stage in India and poised to grow, there is already significant technology adoption in areas such as fan engagement, sports gaming and data and analytics-based decision-making. The proliferation of these

use cases has been enabled by underlying technologies such as AI/ML, Augmented Reality (AR)/Virtual Reality (VR), digital content streaming, sports wearables, cloud computing and digital payments. Trends in the broader ecosystem, namely the growth of sports leagues, growing sports fandom and gaming population, innovation-friendly policies and regulations, and an increasing number of start-ups and sports technology providers, are expected to be key drivers of growth.

A recent analysis of India's sports technology sector highlights significant trends driven by technological advancements and evolving user preferences. First, technology is pivotal in enhancing fan engagement among India's digital-savvy audience, who consume sports content on digital platforms and actively interact on social media during live matches. Studies indicate that over 80 percent of sports fans use second screens while watching broadcasts. Beyond streaming and social media, digital platforms are increasingly used for ticket booking, purchasing sports merchandise and accessing in-stadium services. This trend presents substantial revenue opportunities for platforms and brands, drawing more fans into these digital ecosystems. Platforms use technology to enhance user experiences, fostering a virtuous cycle of engagement and satisfaction.

Second, technological innovations such as advanced data analytics and wearables empower teams, coaches and athletes to optimise performance, adjust tactics and mitigate injuries. These tools offer a competitive edge in talent scouting and decision-making processes. Similarly, Video Assisted Referee (VAR) systems, supported by camera angles and data analytics, enhance officiating accuracy during games.

Third, the rising popularity of sports gaming has spurred the growth of FS and esports platforms and game developers. Technology plays a crucial role in providing immersive user experiences, with Indian game developers actively creating compelling titles for both local and global sports enthusiasts. Globally, technology has played a crucial role in advancing more realistic graphics and gameplay, positioning gaming at the forefront of driving innovation in the media sector.

Fantasy sports

The FS industry, a key component of the sports technology industry, grew 21 percent from INR6,800 crore in FY22 to

INR8,200 crore in FY23. However, according to industry experts, estimated revenue growth has slowed, with a mere 11 percent growth (INR9,100 crore) in FY24 and is expected to see a degrowth of 10 percent in FY25. This is mainly due to the tax policy changes implemented in October 2023. Due to the impact of policy changes, the market is expected to post a CAGR of 7 percent until FY29, compared with a 30 percent CAGR in the preceding five-year period.^[1]

The recent increase in GST rates for online real-money gaming in India from 18 percent on Gross Gaming Revenue (GGR) to 28 percent on deposits has introduced significant challenges for the industry. While this move provides regulatory clarity, it limits Fantasy Sports Platforms' (FSPs) ability to reinvest in technology and may raise participation costs, impacting the industry's financial health and growth trajectory.^[3]

Figure 2: Fantasy sports market in India (INR '000 crore) ^[1]

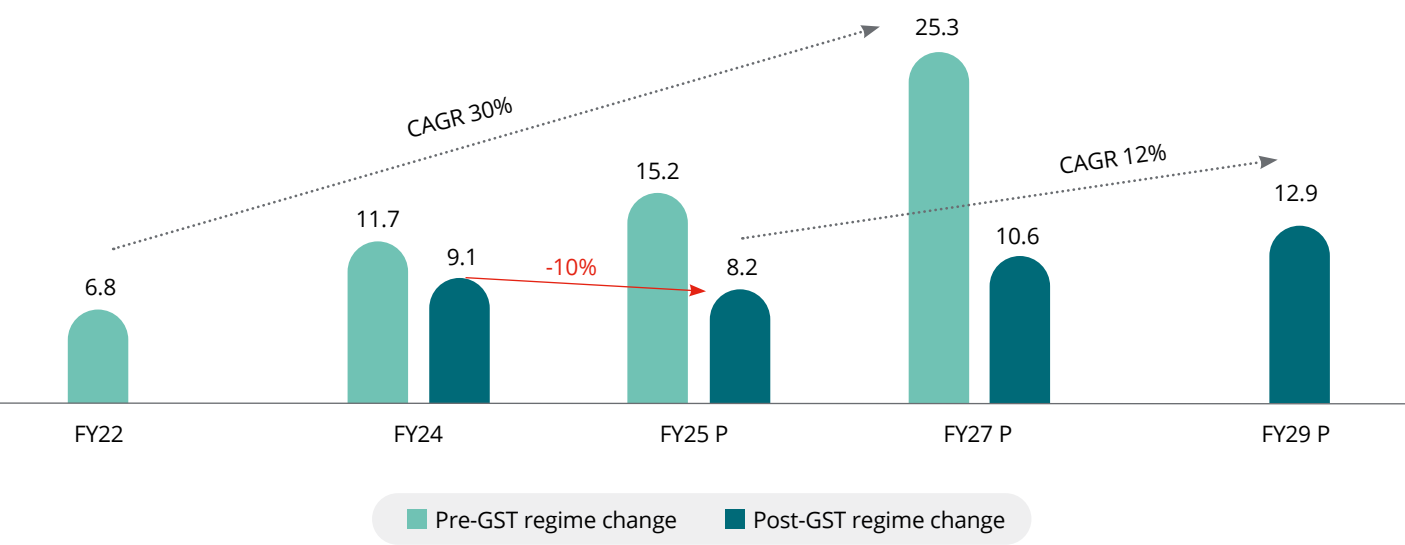


Table 1: Summary of Sports Tech Sector in India

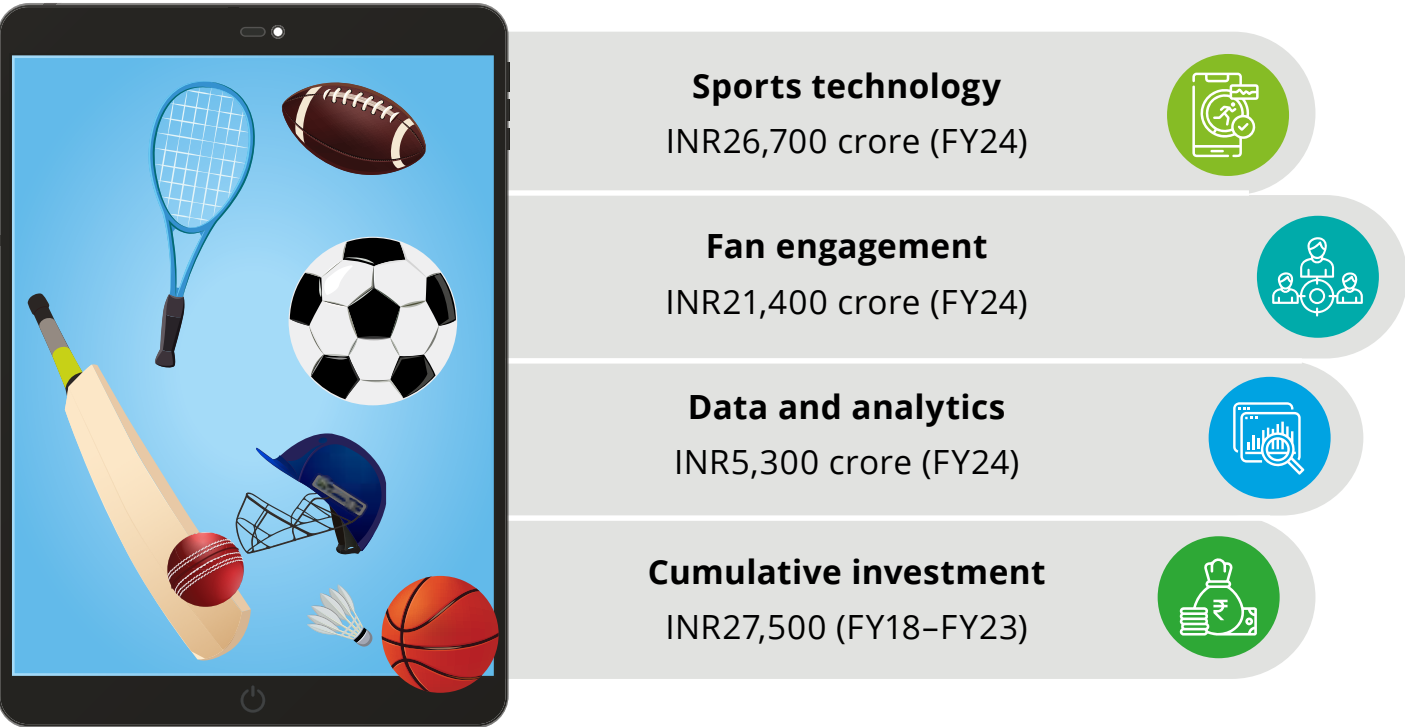
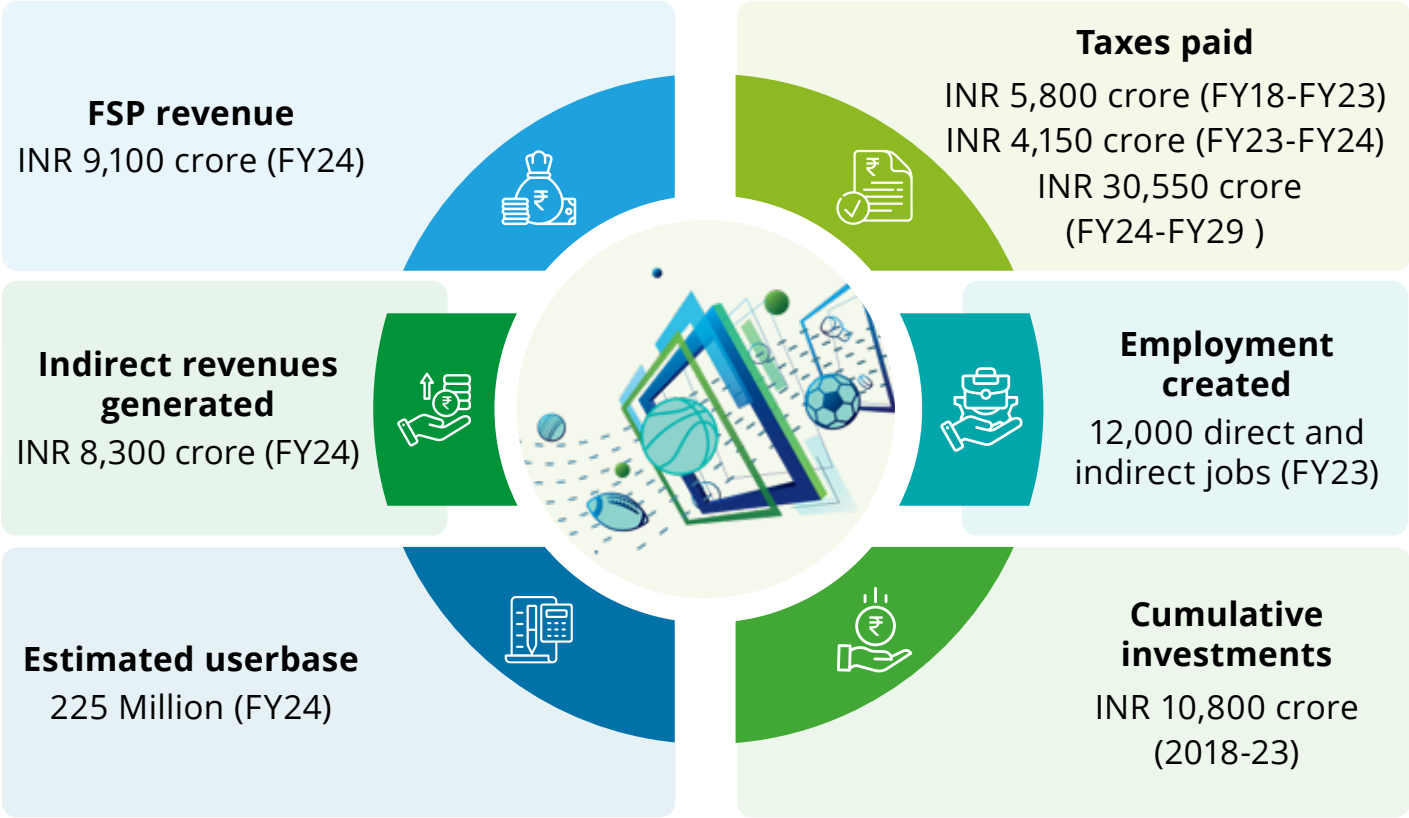


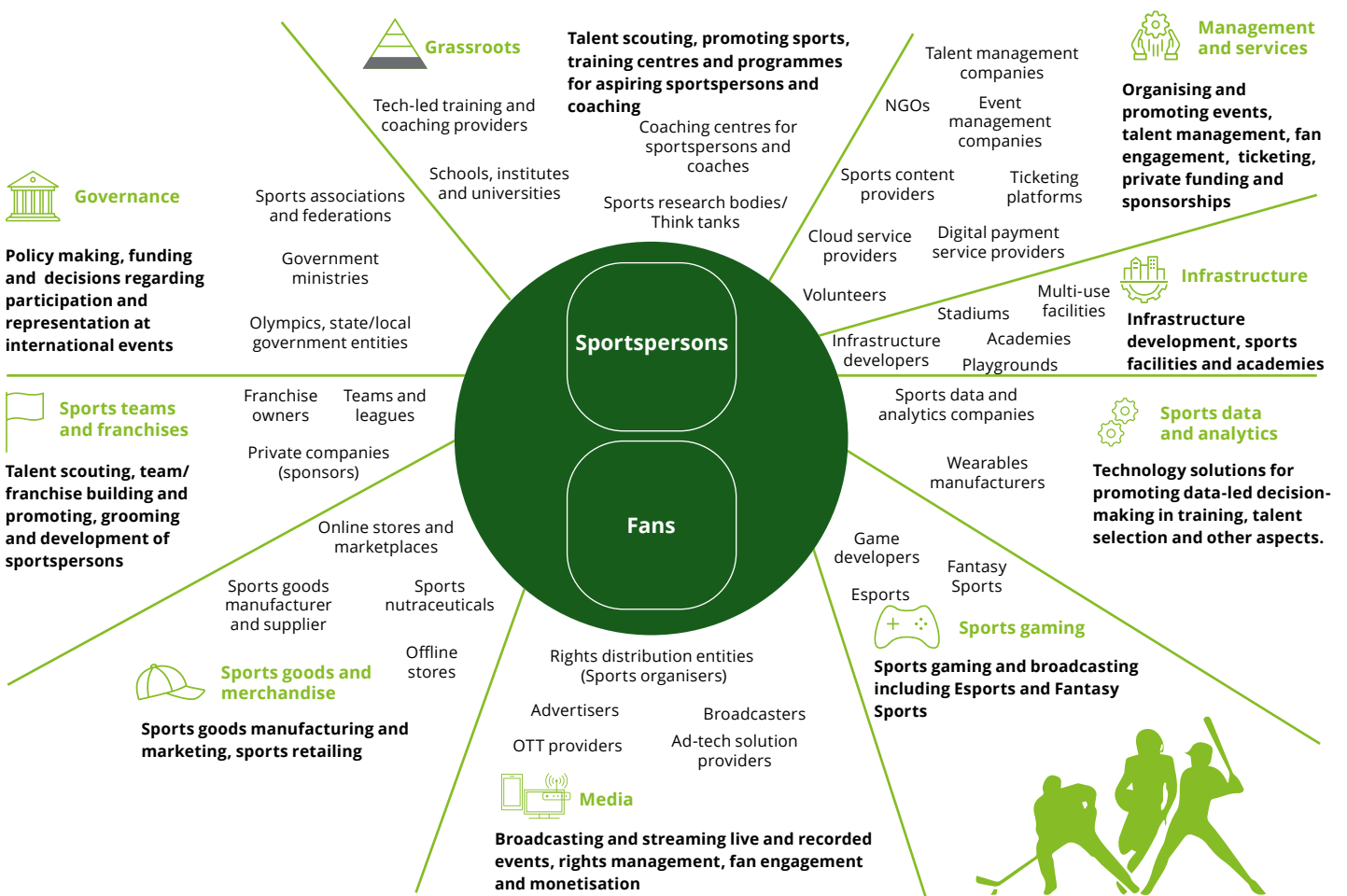
Table 2: Summary of the fantasy sports sector in India





2. Introduction to the sports ecosystem

Figure 3: Understanding India's Sports Ecosystem^[1]



The sports sector in India is a sum of multiple parts that work collectively to build a successful sporting nation. At the core lie sportspersons and fans, who act as the driving force behind the advancement and popularity of sports. These are enabled by a large ecosystem of complex and interconnected relationships that influence the growth of sports and sporting culture. The sports ecosystem encompasses key factors such as governance, grassroots development, management and services, data and analytics, sports gaming, media, goods and merchandise and teams and franchisees.

Technology increasingly plays a fundamental role across the sports technology ecosystem and is helping different segments in their day-to-day functioning. While some areas, such as media and professional sports teams, are early adopters of the latest technology, other areas, such as infrastructure development or governance, require a more thoughtful and conscious effort to deploy technology meaningfully. Technology plays a crucial role in creating a more cohesive ecosystem that works seamlessly to aid India in emerging as a global sporting powerhouse.

3. Defining the sports technology taxonomy

Sports technology refers to the use of technology to enhance the experience for sports fans and analyse and improve athlete identification, performance and training.

Within the sector, different stakeholders have put forward definitions of sports technology of varying scope. After studying the existing literature, this report puts forward a taxonomy and categorisation best suited to make sense of the burgeoning sector in India and to track its most meaningful developments. Sports technology is best viewed as the sum of three parts: (i) fan engagement, including sports gaming and FS, (ii) sports data and analytics and (iii) core technology.

Fan engagement is the act of providing an end-to-end sports experience to fans by offering them a means to engage with a sport, team or athlete. The components of fan engagement technologies include sports viewing and consumption, social media for fans, online sports merchandise purchase and sports gaming.

Sports gaming is a subgenre of online gaming centred around traditional sports.

Fantasy Sports: Fantasy Sports (FS) are team-selection contests where users emulate selectors or coaches by choosing a team of real-life players that compete against virtual teams of other users. The results are tabulated based on the statistics generated by real-life sportspersons in officially sanctioned live and complete matches. Therefore, the FS industry is an extension of the real-world sporting event, a second screen per se, and is an avenue for deeper engagement with the sport.

Sports data and analytics involve collecting and analysing relevant historical statistics to help a team, individual or business perform better. They also comprise data and analytics that build content and visuals for fans to consume and engage further with sports. The subcomponents of sports data and analytics include data and analytics providers, wearables and IoT.

Core or foundational technologies refer to those that enable progress and applications in various domains. The core technologies underpinning the sports tech industry include cloud computing, 5G, IoT, social media platforms and digital payment solutions.

Figure 4: India sports-tech landscape ^[4]



4. Market sizing and forecasts

4.1 Sports technology

Globally, the sports technology industry is expected to grow from INR25,70,300 crore in FY24 to INR44,54,100 crore by 2029, at a CAGR of 12 percent.^[1]

North America is the largest market, with a 34 percent market share and a total market size of INR8,76,700 crore. APAC follows closely, with a market size of INR7,61,100 crore and a 30 percent market share.

Globally, fan engagement (encompassing ticketing, content, ad tech, commerce, FS and sports gaming) is the largest sector—estimated to be INR20,14,900 crore in FY24 and is expected to reach INR31,58,300 crore in FY29, registering a CAGR of 9 percent. Sports data and analytics (encompassing data providers and analytics and wearables), with a market size of INR5,55,300 crore, is expected to post a CAGR of 18 percent between FY24 and FY29 and reach INR12,95,750 crore in FY29.

Figure 5: Sports Tech revenues – Global, by region (INR '000 crore)^[1]

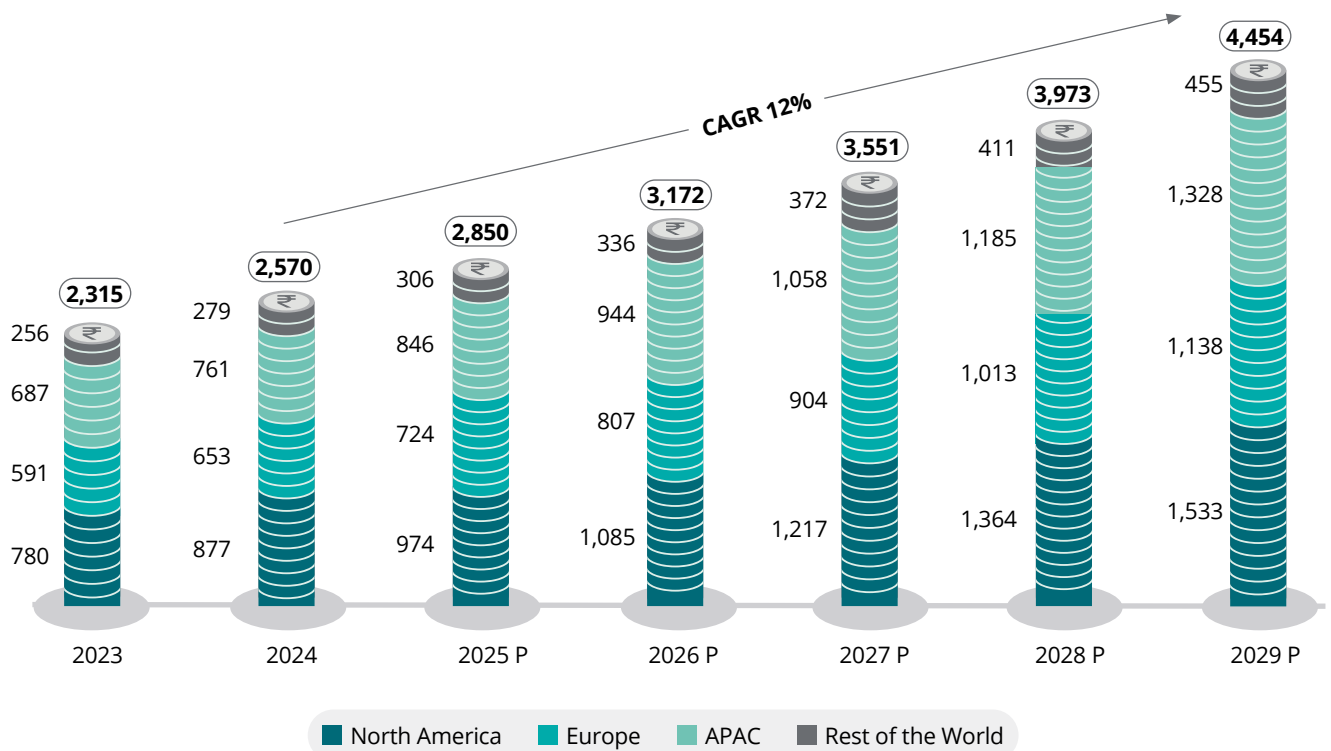
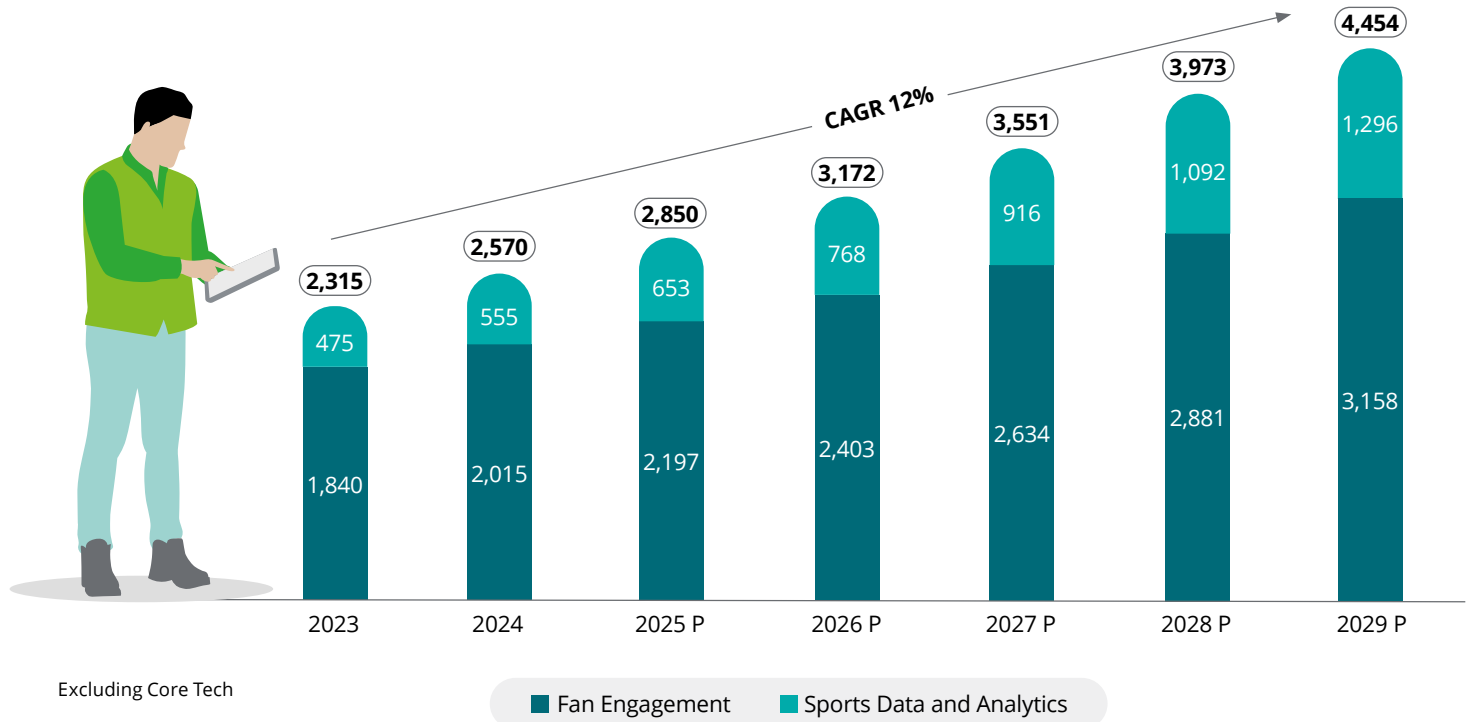




Figure 6: Sports Tech – Global, by Industry (INR '000 crore)^[1]

The sports technology market in India is experiencing rapid growth, with the industry expected to expand from INR26,700 crore in FY24 to INR49,500 crore by 2029, at a CAGR of 13 percent.^[1] Fan engagement is the largest sector, estimated to be INR21,400 crore in FY24. It is expected to grow to INR38,400 crore in FY29, at a CAGR of 12 percent. Sports data and analytics is the fastest-growing sector, estimated at INR5,258 crore in

FY24 and is expected to reach INR11,100 crore in FY29, at a CAGR of 16 percent.^[1]

Given that the Indian sports tech sector is still in its nascent stage, it accounts for just 1 percent of the global sports technology market and 4 percent of the APAC region. However, its low base means there is major headroom for growth.

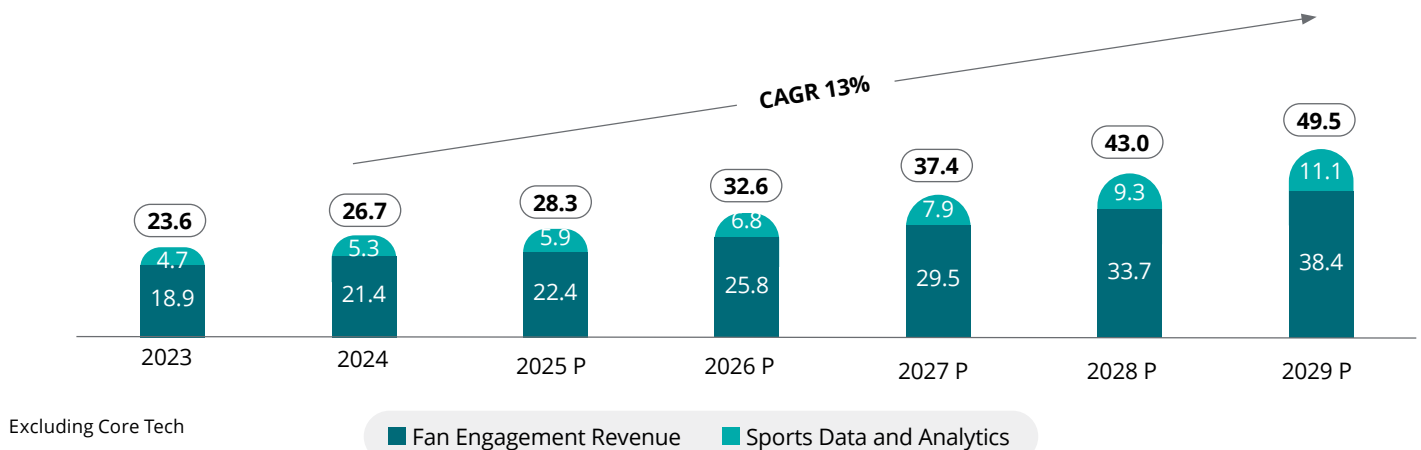
Figure 7: Sports Tech revenues – India (INR '000 crore)^[1]

Figure 8: Sports Tech – Fan Engagement – India (INR '000 crore)^[1]

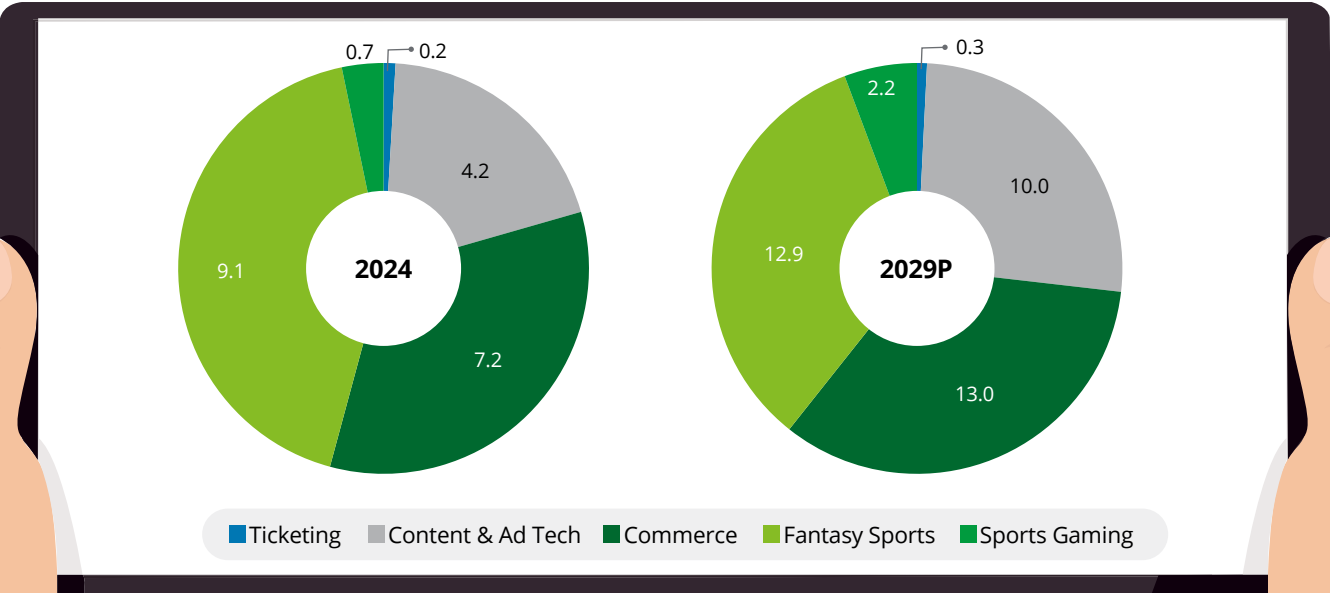
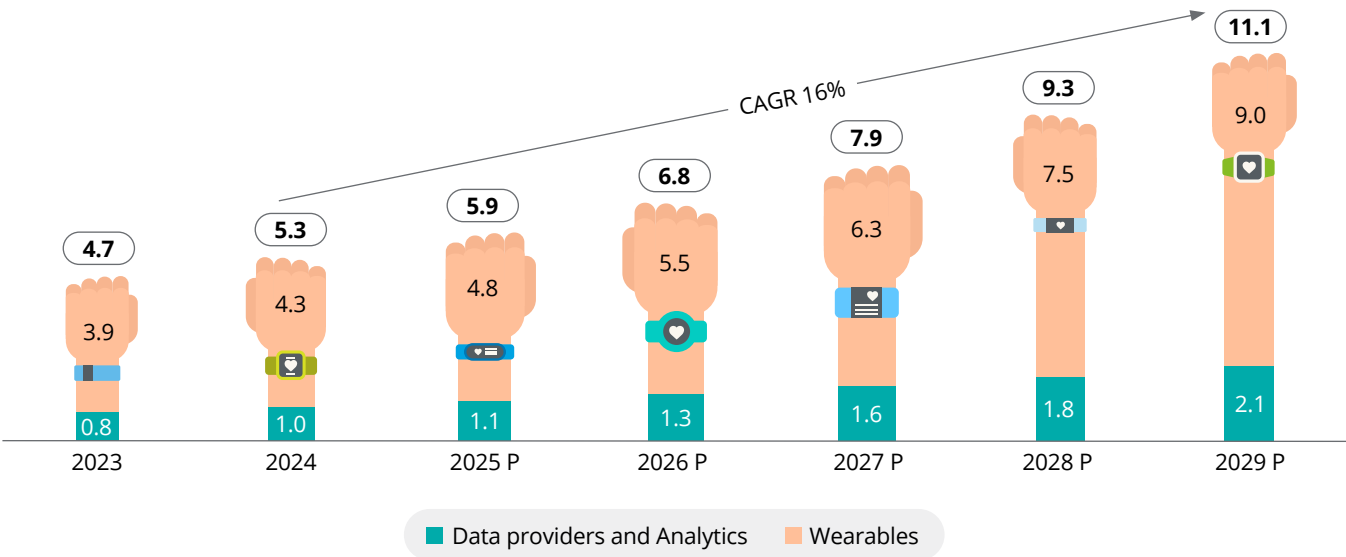


Figure 9: Sports Tech – Data and Analytics – India (INR '000 crore)^[1]



4.2 Fantasy sports

Globally, the FS industry is expected to expand from INR2,11,300 crore in FY24 to INR3,00,800 crore by 2029, at a CAGR of 7 percent.^[1]

North America is the largest market, with a 38 percent market share and a total of INR80,900 crore. Europe follows closely, with a market size of INR65,500 crore and

a 31 percent market share, and APAC, with a market size of INR48,700 crore and a 23 percent market share.

The FS platforms in India have achieved remarkable growth in recent years, with platform revenues hitting INR8,200 crore in FY23, with expectations to post a 30 percent CAGR between FY22 and FY27. However, this has taken a hit, largely due to the tax policy changes implemented in October 2023. Per industry experts,

it has reached INR9,100 crore in FY24, an 11 percent growth due to two high-profile tournaments: the Cricket World Cup and the T20 World Cup in the latter half of FY24. The true impact of these regulatory changes could be seen in FY25, with industry participants expecting a degrowth of 10 percent (INR8,200 crore). Despite the slowdown, forecasts based on historical performance suggest it can recover and continue at a CAGR of

7 percent between FY24 and FY29 and reach revenues of INR12,900 crore. However, the long-term sustainability of this growth trajectory remains uncertain as the sector navigates recent regulatory changes, such as the GST, whose impact is still unclear. This uncertainty is further compounded by the looming threat of a potential retrospective tax order, which poses an existential threat to the industry.^[1]

Figure 10: FSP revenues – Global (INR '000 crore)^[1]

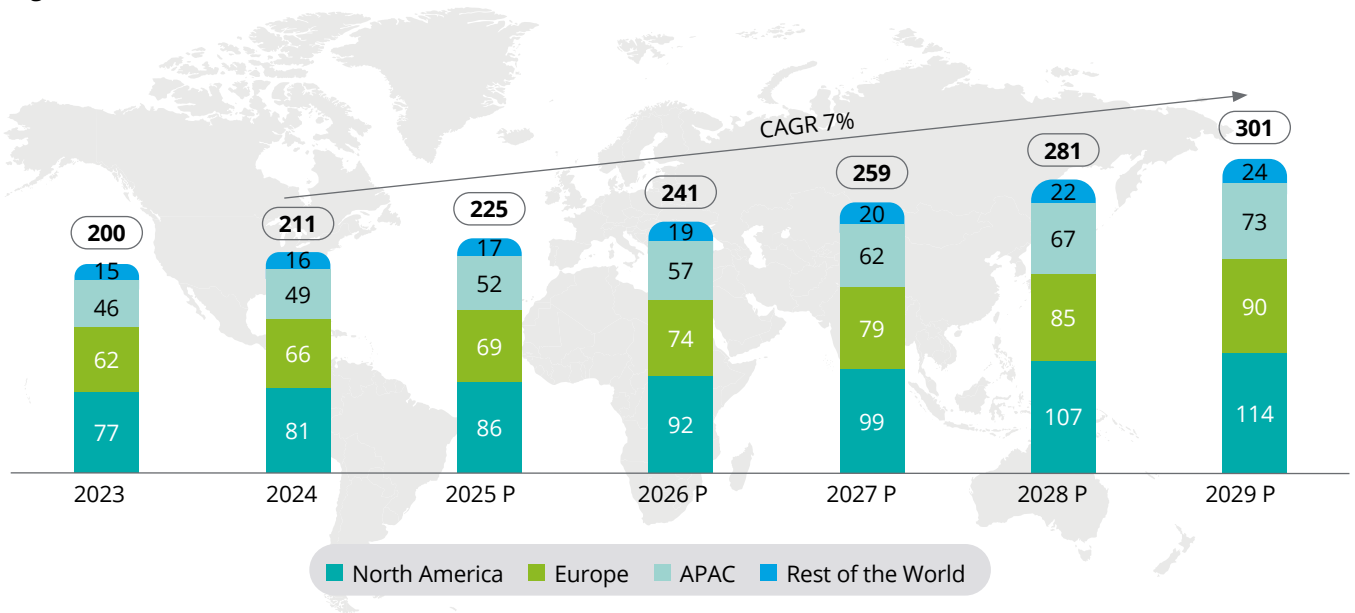
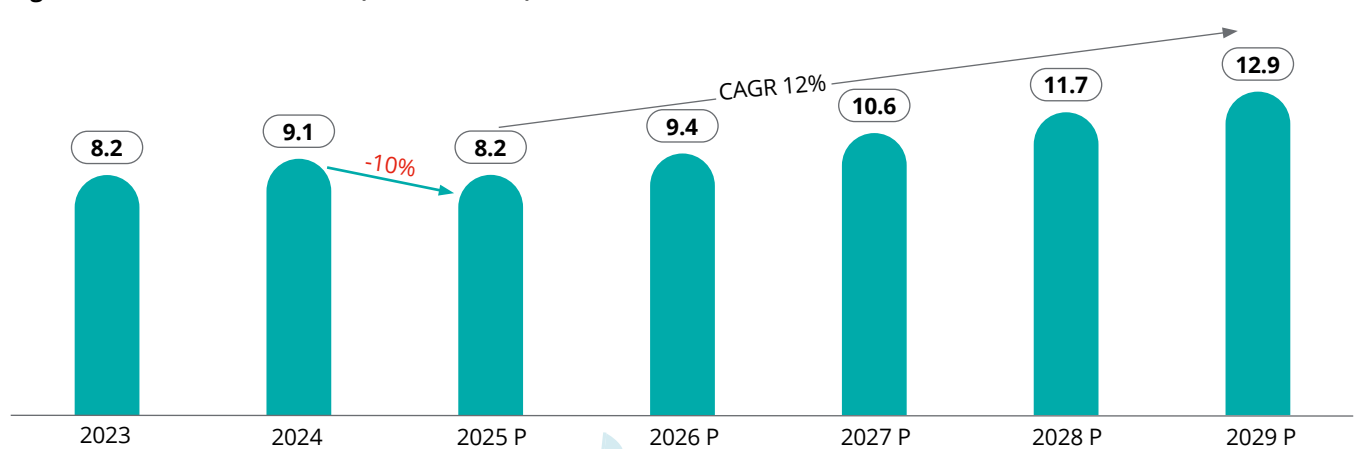


Figure 11: FSP revenues – India (INR '000 crore)^[1]





5. Technology trends in sports

5.1 How sports tech is empowering the sports ecosystem

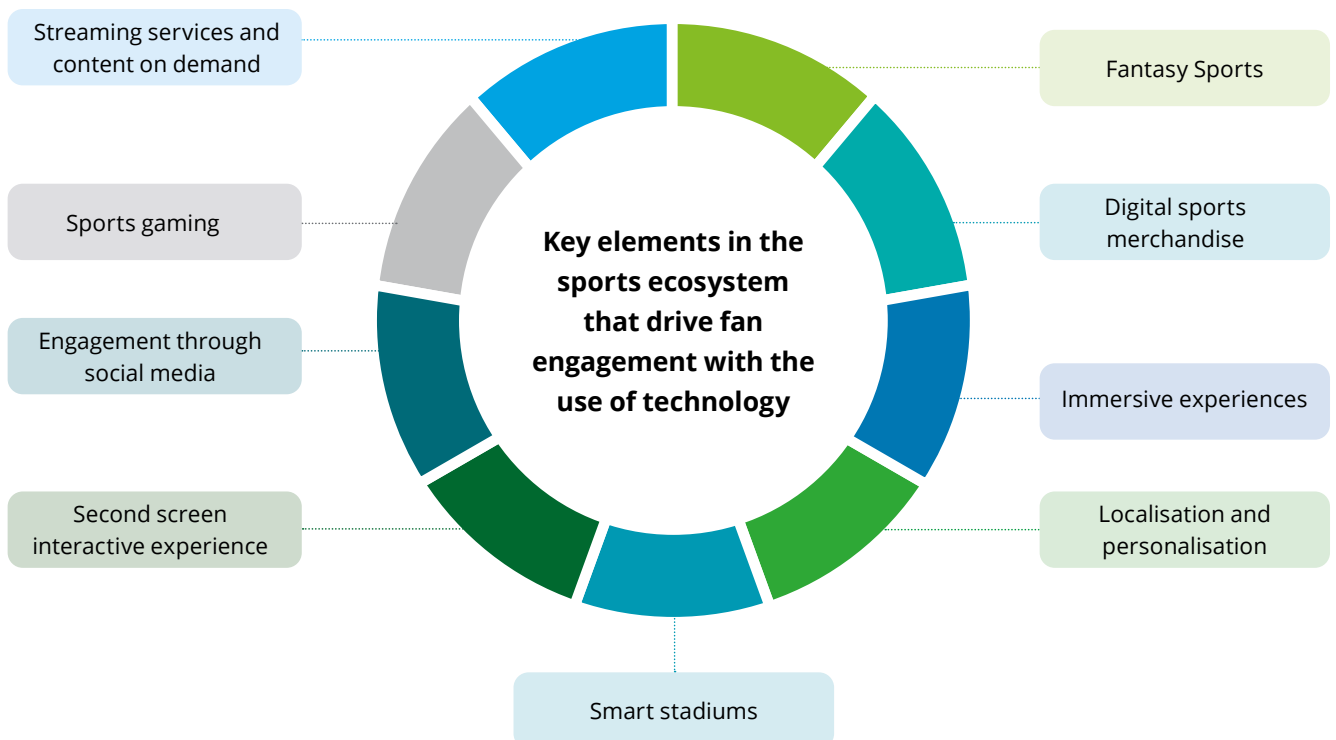
Multiple technology applications exist in the Indian sports ecosystem, from streaming and broadcasting to performance management and data-driven decision-making. Technology is used by all stakeholders in the sports ecosystem: fans, marketers, media, broadcasters, sports authorities, players and their coaches.

The introduction of innovative digital technologies has transformed the way sports are consumed. Fans are moving beyond traditional channels of live events and live broadcasts to engage with teams and players digitally. The evolution in consumption habits has also shaped how brands and marketers interact with fans, which today requires a dynamic and tech-enabled approach to fan interaction and brand promotion.

The increasing consumption of data and AI adoption has also transformed how these technologies are used in the game. Sports authorities are using multiple technological aids to improve in-game decision-making. Coaches and players also use these technologies to monitor and enhance overall player performance, injury prevention and scouting of new talent.

The growing adoption of the latest technologies, such as AI/ML and VR/XR, has contributed positively to the latest trends in the sports industry across fan engagement, advanced streaming, Esports and FS, data and analytics and more. Sports have a positive impact on India's overall growth story. India's sports technology industry has contributed revenue of INR25,300 crore in FY24, which is up by 22 percent^[1] from the previous year. The growing sports goods manufacturing sector offers employment to 500,000+ people in India.^[1]

Figure 12: Key elements in sports fan engagement^[1]



Sports fan engagement

India has a massive sports audience of approximately 678 million, spanning various sports and regions. As fans are the industry's lifeline, broadening and deepening their engagement with sports is essential. India has the highest percentage of Gen Z (age group of 12–27 years) sports fans, and **9 out of 10 Gen Z in India** consider themselves part of a fandom. The digital-first approach suggests that the fan base is likely to expand, with technology playing an increasingly important role in further engagement.^[5]

India is also one of the fastest-growing sports gaming markets in the world, registering a CAGR of 26 percent. The sports gaming category comprises FS, Esports and game developers.^[1]

The FS market in India is expected to reach INR12,900 crore by 2029 at a CAGR (2024–2029) of 7 percent.^[1]

The Esports market in India is expected to reach INR1,286 crore by 2029 at a 25 percent CAGR (2024–2029).^[1]

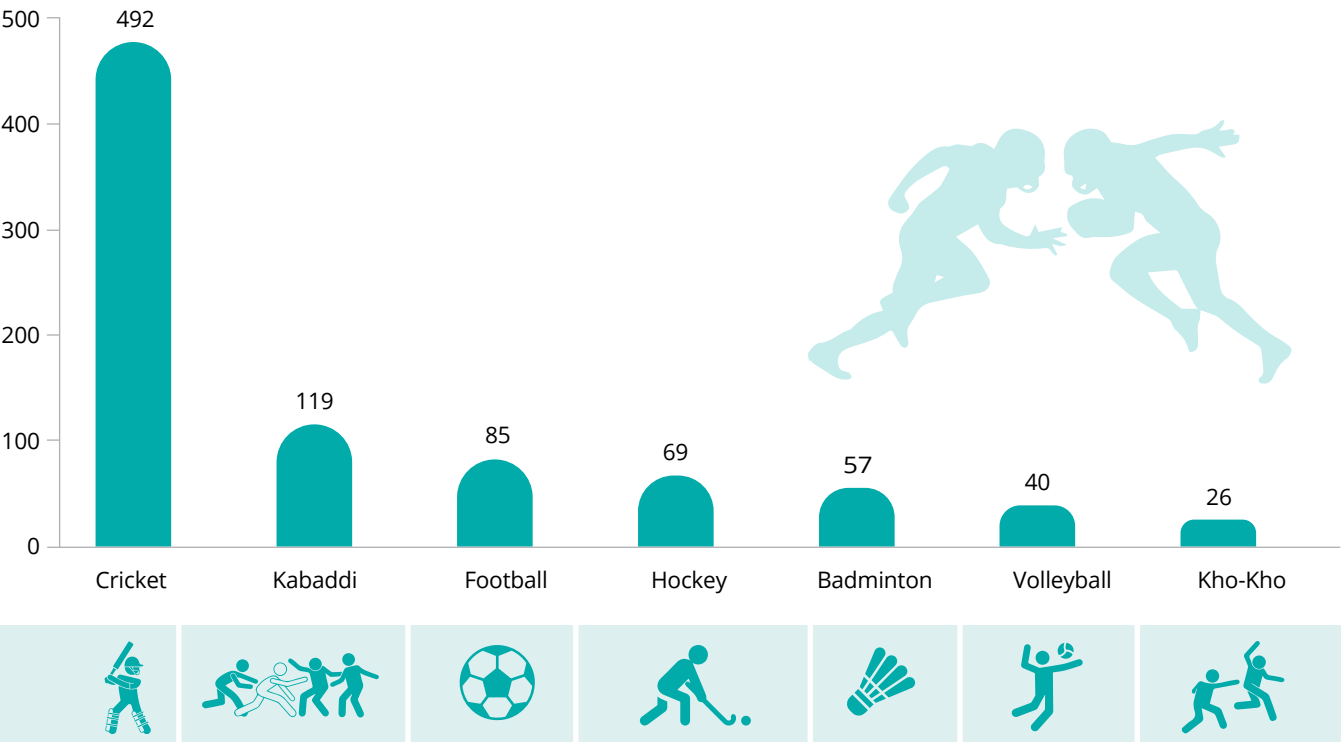
The game developers' market in India is expected to reach INR875 crore by 2029 at a CAGR (2024–2029) of 27 percent.^[1]

Indian sports enthusiasts have embraced FS to solidify their engagement with the sports they choose, making it the most popular form of gaming currently in India. The digital revolution that India has experienced over the past decade has enhanced its value proposition. This includes the growth of low-cost data, seamless digital payments, free/low-cost OTT streaming services and the proliferation of high-quality mobile phones.

Multiple stakeholders have relied on technology to achieve this and have developed a variety of innovations to strengthen fan engagement. A suite of technologies, from ubiquitous use cases such as digital payments, streaming platforms and cloud technologies to more new-age frontier technologies such as AI and AR/VR, is playing an increasingly important role in engaging fans. A wide spectrum of companies is leading their deployment, from large, well-established market leaders to small, disruptive start-ups.

About 89 percent of Indian sports fans believe that using emerging technologies has enhanced their overall viewing experience.^[2]

Figure 13: Fan Base in India by sport - In Million^[6]



The ongoing growth in fan engagement is driven by the growth in television audiences, internet penetration and social media following. This is evident in the growth of merchandise sales and the surge in FS participation. The FS industry has enhanced the sports viewing experience for fans by allowing them to actively engage with traditional sports rather than passively watching the match. The vision of transforming India into a sporting nation centres on boosting fan engagement and understanding how consumers wish to consume sports.

Following are some of the key ways in which technology is redefining fan engagement

- The rise of digital sports platforms, driven by advanced features and convenience
- Second screens and connected devices have driven all-around engagement with various forms of content and interactive features
- Localisation and personalisation have enhanced the sports viewing experience for fans
- Advancements in technology have propelled sports merchandise platforms, enhancing the overall fan experience
- Augmented Reality (AR) and Virtual Reality (VR) technologies have emerged as pivotal tools in fan engagement
- The intersection of sports and social media has transformed the way fans interact with their favourite teams and athletes
- Smart stadiums are in their nascent stage in India; however, it is expected to be a key driver in bringing fans to stadiums
- Growing adoption of advanced technologies by FSPs to deliver best-in-class user experience
- Growing popularity of Esports in India, making India one of the leading Esports markets
- Indigenous development of game titles in the sports genre

The rise of digital sports platforms, driven by advanced features and convenience

Over the past few years, live streaming and broadcasting in India have undergone a major transformation. The advent of new technologies, low data rates and the rising affordability of smartphones have fuelled the use of digital platforms for consuming content. As a result, over 50 percent of the fans prefer to stream live sports, and over 90 percent of the Indian fans are willing to pay to watch live sports.^[7]

Indian start-ups are enabling the success of these streaming platforms through cutting-edge technologies. For example, an Indian start-up has created an AI-powered engagement platform that offers contextual

content delivery. Its computer vision technology recognises and tracks key objects in live video feeds (including athletes, brand logos, products and events) to offer interactive live TV streaming experiences by overlaying contextual content. The start-up was recently acquired by a leading sports-first live TV streaming platform based in New York, which is a testament to India's ability to build world-class, cutting-edge technology in this space.^[8]

Streaming platforms have improved user experiences and deepened fan engagement with redesigned viewing options to provide fans with better immersion and flexibility. A leading streaming platform in India offers a vertical video stream that shows more intricate details of the action, using AI to ensure the ball remains in the best possible region of interest on screen. The feed can also be split up to display two camera streams simultaneously for a better viewing experience.^[9] The platform has also launched Dolby Atmos audio and Dolby Vision for the app users to enhance their viewing experience.

Furthermore, India's smartphone penetration allows access to digital broadcasts in remote areas, boosting fan engagement nationwide. New streaming services meet this demand and provide alternatives to major broadcasting platforms. A leading sports and gaming streaming platform has revolutionised sports streaming for popular and niche sports in India. The platform provides live streaming services for sporting events, athlete- and team-related content and statistics, as well as an online merchandise store. These offerings are underpinned by an innovative pricing strategy—its pay-per-view feature, which allows fans to watch a particular series or match at a sachet pricing rather than buying a monthly/quarterly/annual subscription, is winning hearts among fans. Importantly, the platform has increased in non-cricket content, streaming sports such as rugby, golf, horse racing, handball, football, hockey and baseball. The platform has used enabling technologies such as AWS cloud and various other technologies to deliver secure live streams.

Globally, best practices include extensive digitisation, the use of AI for personalisation and cloud technologies to offer seamless digital broadcasting. Digitisation has helped fans get enhanced and expanded broadcast coverage, interactivity with athletes and fellow fans and athlete performance data in real-time. According to a survey, over **65 percent** of devoted fans in the US go online at least once a day for sports content.^[10]

A leading media company showcased advanced technologies by launching its new AI-powered Catch-Up feature, which delivers AI-powered highlights to fans.



It also collaborated with a major cloud service provider to ensure low latency and uninterrupted digital video feeds for its US broadcast of FIFA World Cup Qatar 2022.

Second screens and connected devices have driven all-around engagement with various forms of content and interactive features.

The rise of short-form content, the need for an active rather than passive watching experience and the desire to get the latest information have made the second screen experience indispensable for Gen Z and Millennial fans.

Over 80 percent of sports fans are estimated to use second screens while watching a live sports TV broadcast.^[11]

Most users rely on a second screen to use social media, chat/message friends to make the experience more social and read news updates or search related information while watching a match. This shift provides vast opportunities to connect with fans and forge deeper connections. The large pool of Indian start-ups and tech companies have understood this shift and cater to the fans' increasing demand for sports content. Platforms offer various types of content, including match scores, highlights, polls and quizzes, increasing fan engagement. Sports teams, brands and OTTs use SaaS platforms that offer AI-generated short-form content and match highlights using deep learning technologies to meta-tag video content and generate bite-sized clips based on pre-identified key parameters (e.g., in Football: goal, save and yellow card).

The clips are then auto-resized and time-optimised to suit different social platforms and can be auto-shared with relevant graphics and ads added per the client's requirements. It also helps generate AI-led highlights of a live match.

Platforms that offer sports stats, news and live scores are prime examples of second screens that keep sports fans engaged with instant updates. For instance, a leading cricket data platform is a database of historical matches and players from the beginning to the present. It is considered by many to be the authoritative source for historical cricket data. The platform uses advanced record-keeping and data analytics technologies to present data meaningfully for fans. Similarly, fans highly engage with the FS platforms to create fantasy teams and track the performance of their teams and players during matches. Engagement on these platforms peaks on match days, indicating that the fans consider them valuable complements to the main sporting event.

This is further evidenced by its engagement directly correlating to the leading cricket premier league, which peaks during the league season in April and May. Traffic on a leading sports information platform grew by approximately 14 percent during the league season in 2024 and will continue to grow following the Cricket World Cup.

Second screens also present revenue generation opportunities for teams, brands and advertisers by reaching the right audience innovatively during live events. A leading media company's linear vertical launched an innovative patented technology-based solution that allows brands to engage with their

audience during a popular cricket league broadcasting. The solution uses QR codes and allows fans to interact with brands and gain access to special offers by brands on their second screen without disrupting the sports viewing experience.^[12]

Picking up on this trend, sports teams have launched mobile apps to keep fans engaged during sporting events and off-season. Leading cricket league teams have dedicated mobile apps that offer live match scores, behind-the-scenes content, contests and other interactive features. One of the leading team's mobile apps has a fan rewards programme where fans can earn some exceptional experiences and has recently launched a new mobile app that offers a plethora of exclusive features and content, including behind-the-scenes interviews to short clips, highlights and a deep dive into stats and player profiles. Interactive games add an extra layer of excitement for the fans.

Globally, companies have been using technology to offer interesting content to keep fans engaged. Platforms use cloud and AI/ML to offer best-in-class streaming, personalisation and a second screen experience to sports-viewing fans globally. They provide live scores, highlights, sports news, videos, stats, standings and schedules, exclusive content and FS for fans.

Localisation and personalisation have enhanced the sports viewing experience for fans

With fans preferring to watch content in their native language, particularly in tier-II and tier-III cities, digital platforms have employed technology to meet their viewers' demands cost-effectively. Today, various platforms offer content in many local languages using auto-translation tools, GenAI and other technologies.

Beyond serving content in vernacular languages, some popular initiatives help major streaming platforms cater to diverse audiences by providing local-level sports feeds highlighting grassroots competitions across various sports. A leading player in enabling streaming for grassroots-level tournaments provides functionalities such as live telecasts across multiple sports, automated player highlights and player profiling, resulting in enhanced fan engagement in niche areas.

Personalisation on digital platforms is another key aspect for providing a better user experience and keeping the fans engaged with the platform. A leading sports streaming platform offers personalisation by providing content recommendations based on users' favourite teams and players using AI/ML technologies. Further, the platform offers enhanced fan experience

with features such as quick access to live scoreboards, mid-match highlights and customisable and immersive streaming experience, allowing users to choose their preferred language and access live scorecards and statistics during matches.

Another leading streaming platform has used GenAI for thumbnails and trailers, dynamically adapting visuals based on individual user preferences to attract attention and boost viewership. It has further enabled personalised content recommendations by deploying an NLP (Natural Language Processing)-powered search function that analyses user habits and preferences, improving search accuracy and facilitating users in discovering content based on moods, themes or specific scenes.^[13]

Globally, platforms use even more powerful and cutting-edge AI-powered recommendation engines to offer hyper-personalisation through better-targeted content recommendations and user-specific highlights. Beyond sports, a global leader in video content streaming has emerged as a leader in AI-powered recommendation. It uses ML algorithms to analyse user data and movie ratings, creating 1,300+ recommendation clusters based on viewing preferences. This personalised approach ensures that each user is presented with a tailored list of movies and TV shows upon accessing the platform. This leads to better user engagement and longer session time per user. Sports streaming platforms can replicate similar technologies to improve fan engagement and cross-sports fan engagement.

India can capitalise on its vast digital infrastructure to become a leader in sports content consumption. By offering localised and accessible sports content and delivering specific requirements of its population's diverse preferences, India can create a more dynamic and interactive sports ecosystem that blends technology with cultural nuances.

Advancements in technology have propelled sports merchandise platforms, enhancing the overall fan experience

Traditionally the sports merchandise market in India is dominated by unauthorised or replica merchandise. However, a growing segment of fans is willing to pay for authorised merchandise, and online merchandise platforms have been catering to this demand. These platforms are now using advanced technology to further elevate customer experience on digital channels as well as in-store experiences. AR-enabled innovations, such as the immersive try-on feature launched by the

sporting goods chain, have further enhanced the overall in-store shopping experience. Similarly, each section at a leading sports retail offline store offers an immersive experience where shoppers can test and play with products, creating a hands-on and engaging shopping environment.

AR and VR technologies have emerged as pivotal tools in fan engagement

The sports consumers' preference for active participation is being enabled by technologies such as AR/VR. Recently, an international cricket governing body collaborated with Apple to launch a revolutionary immersive app for the tech giant's latest product: the Apple Vision Pro. During the Cricket World Cup, the app offered a novel experience to cricket fans, allowing them to step onto the cricket pitch from the comfort of their homes. The app will enable fans to immerse themselves in the stadium's atmosphere and provide interactive data overlays and visualisations.^[15]

AR technology has also been used by popular sports franchises. In 2024, one such franchise launched an AR lens on Snapchat during a leading cricket league. The app allowed fans to cheer on the teams by using AR filters, enhancing engagement levels.

Beyond cricket, a global chess league was the first ever chess league in the metaverse, garnering interest among fans globally. While these features showcase technology in its early stages, they also suggest the impending revolution in the fan experience as these technologies advance.^[16]

Similar innovations which are less revolutionary but further developed are also helping fans enjoy a more immersive experience. A streaming platform that acquired sports streaming rights of a popular cricket league garnered a lot of positive feedback for offering a hero-camera during league matches in 2024. It is one of the many innovative features offered by the platform. The feature picks the team's star players and shuffles them as the match progresses so that fans can specifically follow what their star players are doing on the field.^[17] Similarly, a D2C streaming service launched in India offers viewers the option to watch the race from the viewpoint of their favourite drivers.

Globally, teams and leagues cater to audiences' preferences for immersive and interactive experiences and further boost fan engagement. Some sports leagues and teams use AR apps that allow fans to point their smartphones at a live game and receive real-time statistics, player profiles and other interactive content overlaid on their screens. Further, a well-known sports

platform in the metaverse uses the latest technologies for an enhanced fan experience. It offers features such as 180-degree VR, feature-rich displays and theatre-like big-screen experiences, as well as a co-watching VR sports hub featuring live, on-demand and pay-per-view access. Beyond a leading basketball association, it also provides access to other leagues.

The intersection of sports and social media has transformed the way fans interact with their favourite teams and athletes

Social media platforms have become the primary source for fans seeking real-time updates and interactive content during sporting events, bringing fans closer to their favourite athletes, teams and sports brands. Additionally, fans now have platforms where they can express their opinions, rejoice in victories and analyse performances, creating an interactive sports environment and fostering a sense of camaraderie. This is particularly true in India, where surveys have estimated that **47 percent** of engaged fans actively use social media for consuming sports content, surpassing the global average of **33 percent**.^[18]

Fans are most engaged when they consume behind-the-scenes content, and a leading football franchise ensures that its fans remain engaged. The franchise uses Facebook Live to broadcast training sessions, allowing fans to interact with players in real-time. Beyond major sports, less followed sports in the long tail, such as golf, have also shown how to keep fans engaged using technology. A leading golf tour has employed AI to automatically generate short video clips of golf shots and share them on social media, increasing fan engagement.

Moreover, social media has empowered athletes in the realm of sports journalism. Athletes can now break news, address speculations and present their viewpoints. They also use social media to foster deeper emotional connections with their fans by sharing personal moments, training routines and behind-the-scenes updates. Virat Kohli is a prime example of using social media for fan engagement. By carefully curating what he posts, he has become the third most followed athlete globally on Instagram, with 269 million followers. He has become X's second most followed athlete, with 63.5 million followers. [19] Similarly, LeBron James shares his on-court highlights and insights into his philanthropic endeavours and personal milestones, creating a special bond with his fans.

Key sporting moments and tournaments spike social media buzz around sports and athletes, benefiting accomplished sports personalities and lesser-known

athletes. For instance, Neeraj Chopra's Olympic gold medal win translated into a digital phenomenon, making him hugely popular on social media. He garnered over 2.9 million mentions from over 1.4 million authors, making him the "most mentioned" athlete globally on Instagram during the 2020 Tokyo Olympics. As a result, Neeraj Chopra's reach on social and digital media has reached over 400 million globally. He keeps his fans engaged by posting training videos on social media platforms.^[20]

Social media has become a crucial tool for amplifying athletes' messages and brands, and it is also a new revenue-generation source. Athletes with a strong following can monetise their social media presence through sponsorships, commercial endorsements and collaborations. Many athletes have become social media influencers, earning significant income from their posts and collaborations. For example, Cristiano Ronaldo reportedly receives US\$2.3 million per sponsored Instagram post.^[21] Brand endorsements on social media use athletes' popularity and their loyal fanbase to amplify their reach, creating a win-win situation for athletes, fans and brands.

Globally, **32 percent** of sports fans, specifically **43 percent** of Gen Z fans, use social media platforms while watching live sports.^[22]

Smart stadiums are in their nascent stage in India; however, it is expected to be a key driver in bringing fans to stadiums in the future

Stadiums are transitioning into dynamic sportainment venues that redefine the experiences of spectators and players. Sports stadiums constantly explore new ways to improve the fan experience and ensure fans return for live events. It has become essential for them to embrace technology for this transformation. Key technologies such as 5G, Wi-Fi, big data, IoT and XR are pivotal for engaging fans on a one-to-one basis, with personalised experiences across multiple platforms. Indian sports venues are striving to provide connected experiences for spectators. 5G connectivity and free high-speed Wi-Fi are already prevalent, with up to 11 cricket stadiums already equipped with these technologies, including Narendra Modi Stadium, Eden Gardens, Wankhede Stadium and Arun Jaitley Stadium. All India Football Federation (AIFF) has included the development of smart stadiums in India, including 30 FIFA standard stadiums and 12 smart stadiums, as part of their Vision 2047—a strategic plan to develop the football ecosystem in India.^[23] While some organisations are initiating such initiatives, India's vision of hosting global events necessitates further government support and an investment influx from the private sector to develop stadiums.

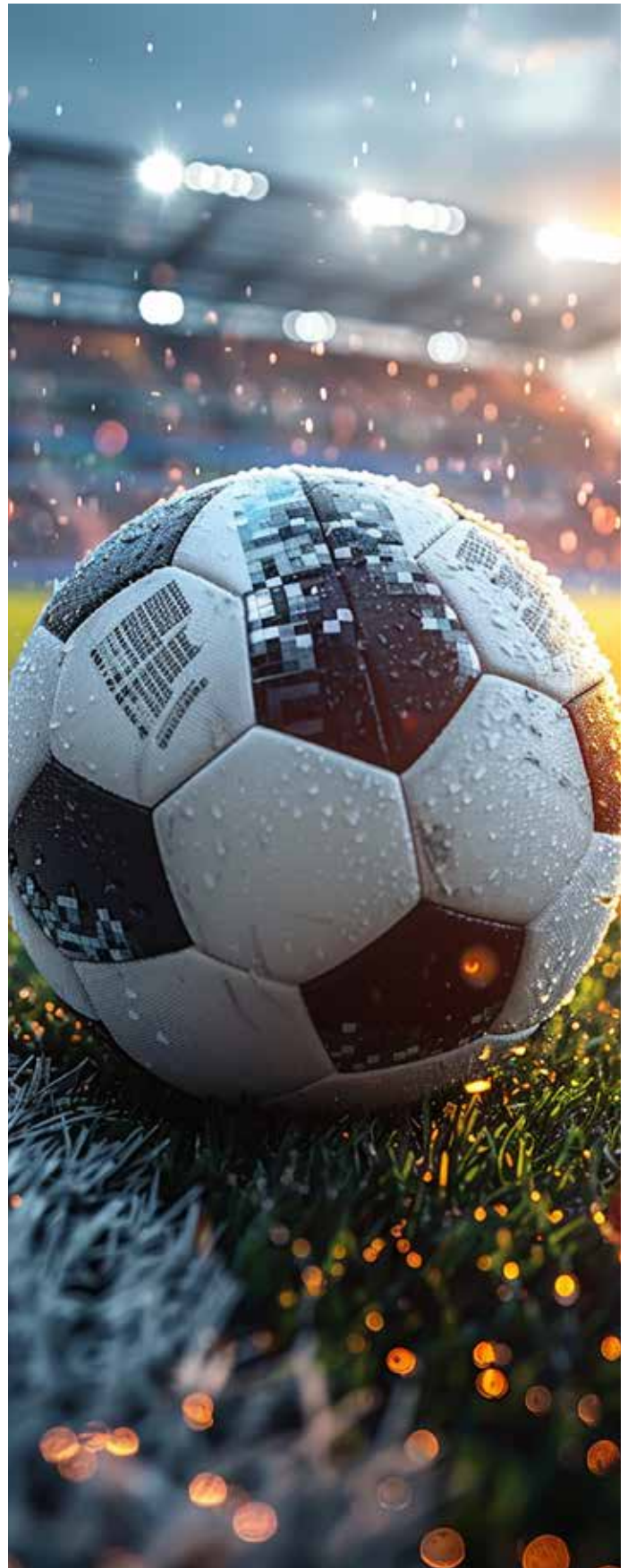
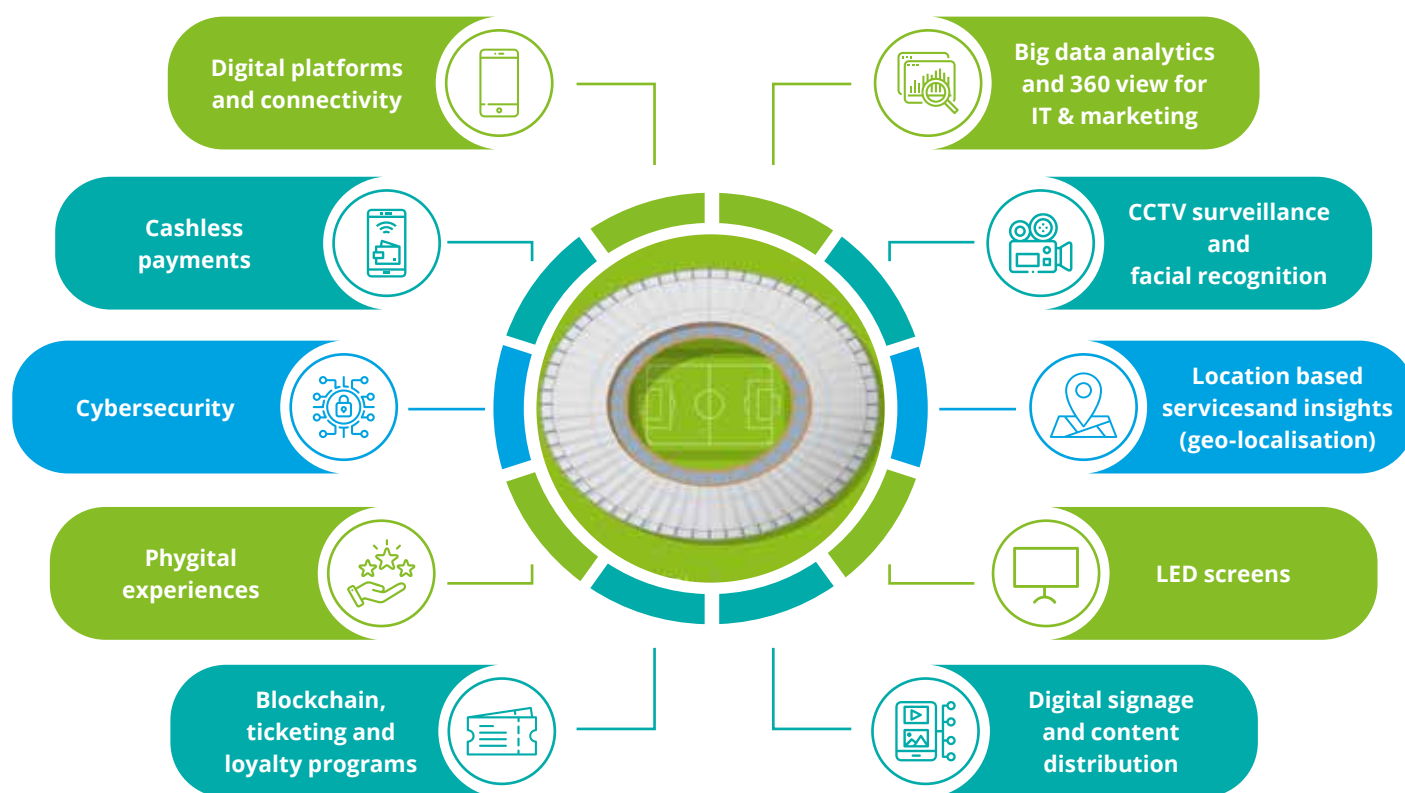


Figure 14: Leading technologies for smart stadiums



Globally, smart stadiums are transforming the stadium experience for fans. The extensive use of AR/VR, IoT, 5G and indoor mapping solutions creates more immersive experiences for spectators.

A stadium in San Francisco, home to a popular football team, and a multipurpose stadium in Atlanta are examples of smart stadiums using IoT to enhance fan engagement. San Francisco's stadium uses a mobile app to provide fans with real-time information on parking, food and beverage options, restroom wait times and in-seat ordering and delivery. The stadium also uses AR to provide fans with interactive experiences during the game.^[24] On the other hand, Atlanta's stadium uses IoT to provide a fully cashless experience, including parking. The stadium also features the largest LED Video display with a 360-degree halo view, enhancing the fan experience.

Teams and franchises extensively use VR to offer fans an immersive experience. Teams use VR to give fans a courtside view regardless of their seat location. Upon scanning the pitch, a mobile app identifies players. It displays their names and statistics, along with VAR

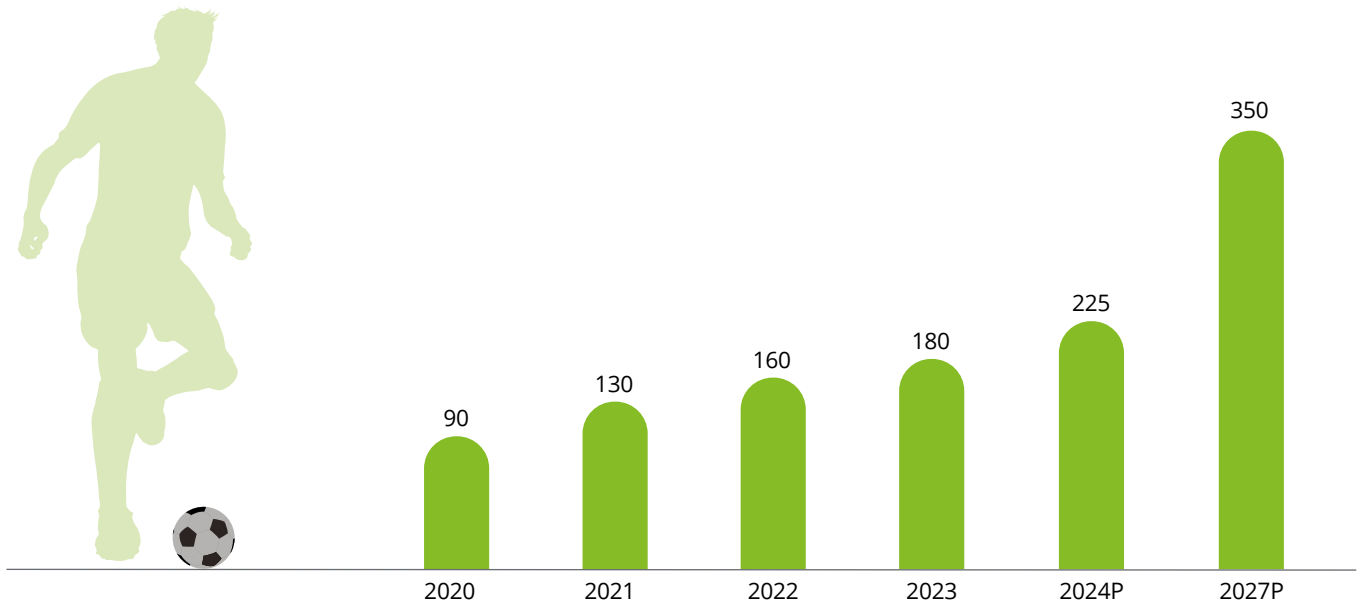
replays and alternate camera angles, enabling fans from thousands of kilometres away to have a realistic experience.

Loyalty programmes in sports are another area that aids the smart stadium experience and has gained popularity in the West. The business model can be brought to India to boost the sports sector and in-stadium attendance. A stadium in London offers a loyalty programme, which gives fans access to ticket priority, discounts on merchandise and exclusive events.

Growing adoption of advanced technologies by FSPs to deliver best-in-class user experience

The FS industry has witnessed significant growth in India. FSPs allow fans to create fantasy teams and compete against each other during live matches. This engagement has added a layer of excitement to sports consumption and served as an entry point for new sports fans.

India boasts over 200 FSPs and over 200 million users. The sector is expected to post a 7 percent CAGR (2024–2029) and reach a revenue of INR12,900 crore.^[1]

Figure 15: Number of fantasy sports users in India (In Million)^[1]

The continued growth of the FS industry is partly due to platforms adopting the latest technologies and trying tech-led solutions to enhance their capabilities and boost overall user experience. While well-known technologies such as cloud and digital payments continue to help drive the popularity of FS, technologies such as AI, ML, analytics, big data and blockchain play a major role in further boosting the growth by allowing platforms to develop high-end FS offerings.

For instance, leading FS platforms use machine learning algorithms for personalising end-user experience by analysing vast datasets of player statistics, past matchups, team dynamics and weather conditions to predict a player's performance in a specific match and to simulate various game scenarios for users, and make informed decisions while creating a team.^[25]

Platforms use AI/ML, analytics and big data to predict and analyse platform traffic at any given time and concurrent users visiting the platform during key sporting events. This helps them manage server capacity to offer a seamless experience while hosting high traffic on the platform.

Furthermore, blockchain technology has recently gained popularity in FS and is used to build trust and fair play in matches and leagues. This has been possible by implementing smart contracts that automate player trades, waivers and payouts without the need for intermediaries. Globally, this technology is widely

used. However, domestic start-ups are pioneering the technology in India. The platform, powered by blockchain technology and deep analytics, acts as a virtual stock market for sports and allows users to trade players by giving each player a unique value based on several parameters.

Globally, sports platforms have successfully implemented blockchain for fan engagement and secure sports collectable trading. A well-known fantasy football platform has integrated blockchain technology for player ownership management. Users can buy, sell and trade digital collectable cards representing real-life football players through the platform.^[26]

More tech-led start-ups are expected to develop unique and innovative solutions for the FS industry in India, leading to further growth.

Growing popularity of Esports in India, making India one of the leading Esports markets

Policy stimuli and the rise of mobile gaming drive Esports' growth in the country. Mobile gaming has been a major driving force behind the growth of Esports in India, with a few popular games gaining massive popularity and attracting millions of players and viewers alike.

The Esports market revenue in India is expected to reach INR1,286 crore by 2029 at a 25 percent CAGR (2024–2029).^[1]

Figure 16: Growth in number of Esports players in India^[27]

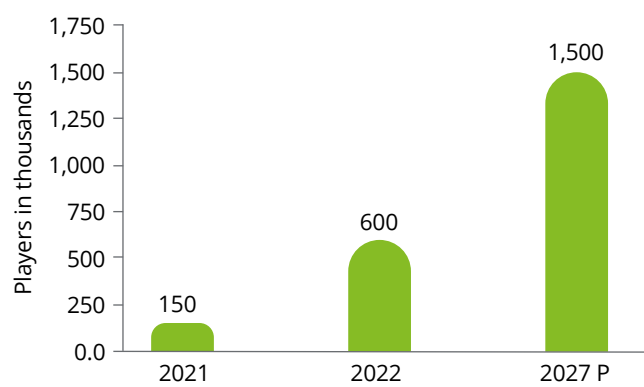
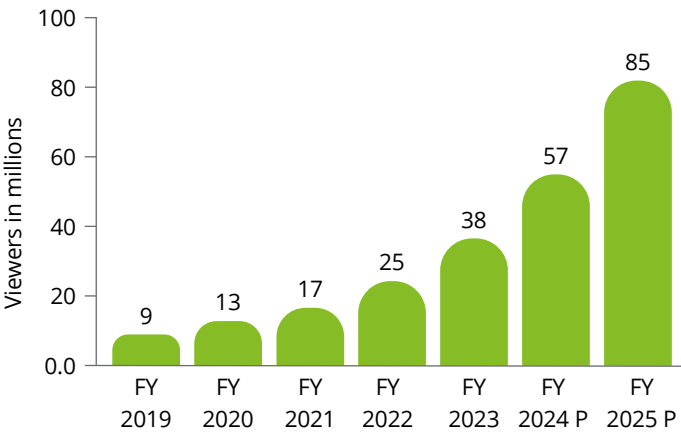


Figure 17: Number of Esports viewers in India^[27]



The proliferation of Esports tournaments has further fuelled participation and viewership in Esports, which leads to more tournaments, creating a virtuous cycle. The Esports landscape is thriving with tournaments and the India Esports Championship. Leading gaming players play a major role in advancing the Esports ecosystem through tournaments and events production, gaming content creation, gaming talent management and Esports consulting services and investments in gaming infrastructure.

This digital exposure has accelerated the growth of individual gamers and catalysed the development of Esports organisations, content creators and tournament organisers. Broadcasters play an essential role in content creation and brand collaboration. These platforms offer intuitive features such as live streaming, chat interaction, channel monetisation and audience engagement, empowering players and content creators to reach and connect with their audiences.

The sector continues to grow in popularity due to advances in next-generation solutions in the industry. Technologies such as computer vision provide detailed information about gamers' decisions and tactics during the match. AI-powered sports streaming platforms offer flexible tournament formats, auto-scheduling for all the games, Esports streaming and interactivity for users. On these platforms, gamers and content creators are able to live stream their gameplay and interact with the audience.^{[28] [29]}

As a result, the number of Indian Esports athletes is expected to grow to approximately 1.5 million by 2027, and the number of viewers is expected to reach 85 million by 2025.^{[30] [31]} Also, the expected economic value generated by the Esports sector is estimated at INR100

billion by FY2025. Due to their popularity among Gen Z and millennials, Esports platforms have become one of the latest avenues for brand revenue generation.^[32] Given the huge traffic growth, it is estimated that brands have been pushing their ad spends in the segment. Leading consumer brands have collaborated with Esports platforms and tournaments to make the most of this growing space.

Indigenous development of game titles in the sports gaming genre

Although still in its early stages, the development and publishing of sports-based video games is slowly growing in India.

For instance, India's only listed gaming company has developed the world's largest cricket simulation game, the World Cricket Championship (WCC), under its subsidiary. The company has developed a console-quality realistic mobile game of international standards. Similarly, another Indian game development company has built one of the most loved mobile cricket game franchises. In line with consumer preferences in India, these games are mobile-based.

Beyond Indian companies, major global companies have also established centres in India where they use the game development talent available in the country. A leading game development studio houses its mobile studios in Hyderabad. Their Indian offices also work on key technologies required for their games, including technologies enabling online concurrent play and player experiences and building digital platforms and other virtual worlds and immersive technologies.

Although the game development sector is in nascency in India, initiatives such as game development incubator

programmes contribute positively towards growth. A leading game development studio in India has launched a game development incubator programme. The programme aims to provide the participants guidance, financial aid and mentorship by industry experts. It also offers the participants access to internal resources, including data and market research, to help them build their respective products for the Indian markets worldwide. Similarly, other gaming studios have incubation programmes in various markets to support independent developers and early-stage start-ups.

India is on track to become a major hub for game development as more young people are drawn to gaming as both a hobby and a potential career. Increasing government support and significant contributions from major players in the industry are also helping to advance this sector.

Sports data analytics and sports science

Sports analytics uses data to help athletes and teams perform better. The approach helps reduce speculation, guesswork and bias out of coaching and key decision-making in sports, and instead, it gives actionable insights that can help improve training and tactics.

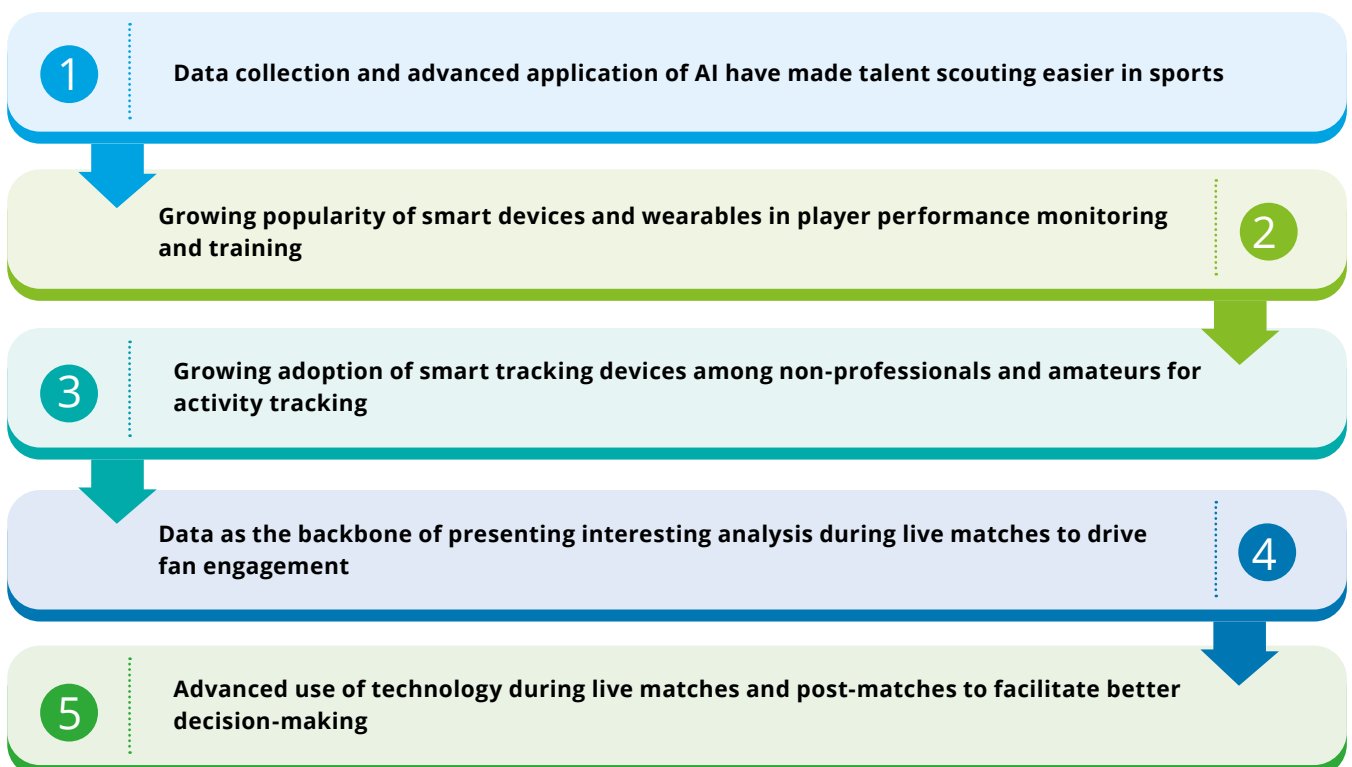
Sports data and analytics are broadly categorised into data and analytics providers, wearables and IoT. Organisations operating in this area collect and process a wide range of data that can provide a competitive edge to a team or individual with detailed analysis.

The introduction of technology has greatly impacted how professional teams and athletes train, how teams are selected and scouted and how key on-field decisions by referees and governing bodies are made accurately and fairly.

Sports data and analytics have also gained popularity with amateur sportspersons and consumers looking to track their health and fitness. Today, they have captured the attention of the wider population and are becoming a lifestyle choice and, in some cases, even a fashion accessory.

The Indian sports analytics market is brimming with potential. Start-ups offering innovative solutions and entrepreneurs passionate about sports and data analysis can carve a niche in the industry. By focusing on performance analysis, predictive analytics and AI/ML, businesses can contribute significantly to the growth of sports in India while making profits for themselves.

Key technology trends that are driving the growth of the sports data and analytics sector in India include:



Data collection and advanced application of AI have made talent scouting easier in sports

Organisations, federations and teams increasingly use technology to maintain player databases, perform player analysis and shortlist sporting talent for key tournaments and events. The Indian landscape has employed cutting-edge technologies, including advanced data collection, analytics and AI/ML. Using data analytics in sports makes talent scouting and recruiting players more effective. It involves keeping track of players' performances and comparing them with other players across leagues. This way, teams can make unbiased decisions about who to bring onto their team and rely less on subjective judgements.

Platforms collect player data to generate player profiles and provide flexibility in sorting, filtering and organising player information to ease identification and scouting. The AIFF has launched and adopted this solution to discover grassroots talent. It allows officials to create player profiles and scouting reports consisting of ratings for football techniques such as dribbling, crossing and finishing to make informed decisions while selecting players. The platform has also collaborated with schools, clubs and NGOs to recruit talent across different levels.^{[33] [34]}

Similarly, a popular sports service platform offers player profiling (along with features such as highlight creation and linking to profiles) and player trials, which enable player scouting and provide players with access to better opportunities.

Furthermore, sports teams and organisations are increasingly adopting AI-based scouting programmes that generate recommendations by capturing and analysing videos of games. For instance, the AIFF has employed technology that uses high-end cameras and AI to capture and analyse games at the grassroots level to help identify talent in small games. The technology enables players in India to be compared with similar age groups in Europe and Africa for gap identification and insightful recommendations. Leading league franchises use AI scouting applications to identify talent at the grassroots level, including in women's sports.

These applications have been adopted by coaches and players alike to eliminate any biases in talent identification and selection.

Growing popularity of smart devices and wearables in player performance monitoring and training

Sports teams, franchises and coaching staff are using smart equipment and performance analytics tools to measure a broad range of data to understand player performance.

Wearables such as data-tracking wristbands, equipment-embedded sensors and sensor-enabled smart clothes offer precise information about athletes' actions, force and accuracy and predict injury risks. This enables evidence-based decisions before and during games. Wearable and equipment-driven video and motion analytics provide statistics about areas such as the position of the ball, player movement and involvement, time of a particular action and the outcome of such action, helping coaches and athletes to course correct training and action if required.

Athletes use sensor-equipped gear to monitor performance while playing. This equipment uses sports-specific sensors, which are made for data analytics and insights for optimal athletic performance. For instance, GPS-based sports gear can track location, speed and other movement-based metrics for outdoor activities such as running or cycling. In contrast, gear with Velocity Based Training (VBT) sensors can track the performance of weightlifters. GPS-equipped vests are also used by athletes who play outdoor sports such as tennis, cricket and football. Various national associations, including the BCCI, are currently using these vests in training camps to provide insights by comparing data across players.

Sports teams and institutions are using these technologies for multiple use cases. For instance, a popular sports franchise has used an athlete monitoring solution to monitor the distance covered by players on the field, average and maximum speeds, player load and wait times to understand player fitness levels and predict any injury prevention.

Sports wearable is a growing market in India; hence, institutes, organisations and start-ups are putting their best effort into producing ground-breaking technology and solutions. One such attempt is made by the students of IIT Madras, who have developed sensor-embedded equipment for boxing that includes sensor-embedded gloves to analyse punch force, wireless foot insole to capture the ground reaction force and record movement in a player's body and smart foams with sensors within the helmet to capture data related to the impact of a punch.

Growing adoption of smart tracking devices among amateurs for activity tracking

Demand for affordable sports activity tracking devices and technologies among amateurs, grassroots-level players and smaller sports entities drives the sector's growth. Start-ups in this sector provide solutions tailored to meet the needs of these consumers. One such company in the space assists grassroots-level players, emerging talents, sports teams, athletes and coaches in enhancing their performance through

wearable devices and mobile applications that analyse and track player performance. The company has introduced wearable sports technology to young children at an affordable price range, making it accessible for school, college and academy-level players, as well as for amateurs.^[35] Similarly, another start-up is revolutionising how amateur players can play better cricket with its product “Power Bat”. It offers a smart sticker designed to be placed on the bat. The sticker captures data points associated with player technique and training performance, which is passed on to the app connected through Bluetooth and stored via cloud technology. The app then provides insights from cloud-powered data analytics, ML and AI. Players can use these insights to monitor and improve their performance.^[36]

Beyond applications at the grassroots level, fitness-tracking devices such as smart wristbands and smartwatches have captured mainstream consumers' attention. This trend is supported by the fact that smartwatches and fitness tracking bands are increasingly viewed as fashion accessories, appealing to various user groups, including women and youth. While fitness enthusiasts sparked the initial craze for wearables, a further boost was given during the pandemic, after which people have been keen to track their basic health parameters, such as blood oxygen levels and step count. Due to its popularity and reach, such devices are now available at an entry-level price

of about INR1000, making them more accessible to a broader consumer base.

Connected wearables brands have driven this growth by offering affordable options and catering to local consumer preferences. Wearable fitness tracking devices have built-in sensors that track physical activities, such as step count, heart rate and burned calories.

The growing adoption of wearable technology in sports offers a wonderful opportunity for India's start-up and sports tech ecosystem to build solutions for athletes, coaches and amateurs globally.

Data serves as the backbone for engaging analysis during live matches, enhancing fan interaction

Data collection has been one of the key aspects during live matches for various reasons, including record keeping, player performance analysis, opponent strategy tracking and generating data-driven visualisations for fans during live matches. Nowadays, viewers often see real-time data during a game, including player shooting percentages, win probability, speed and stamina levels. These overlays provide fans with a deeper understanding of the action as it unfolds. For instance, a wagon wheel during a live cricket match shows a batsman's scoring areas on the field and pitch maps of a bowler to show how many balls have been pitched and where.

Figure 18: Pitch map visualisation in cricket

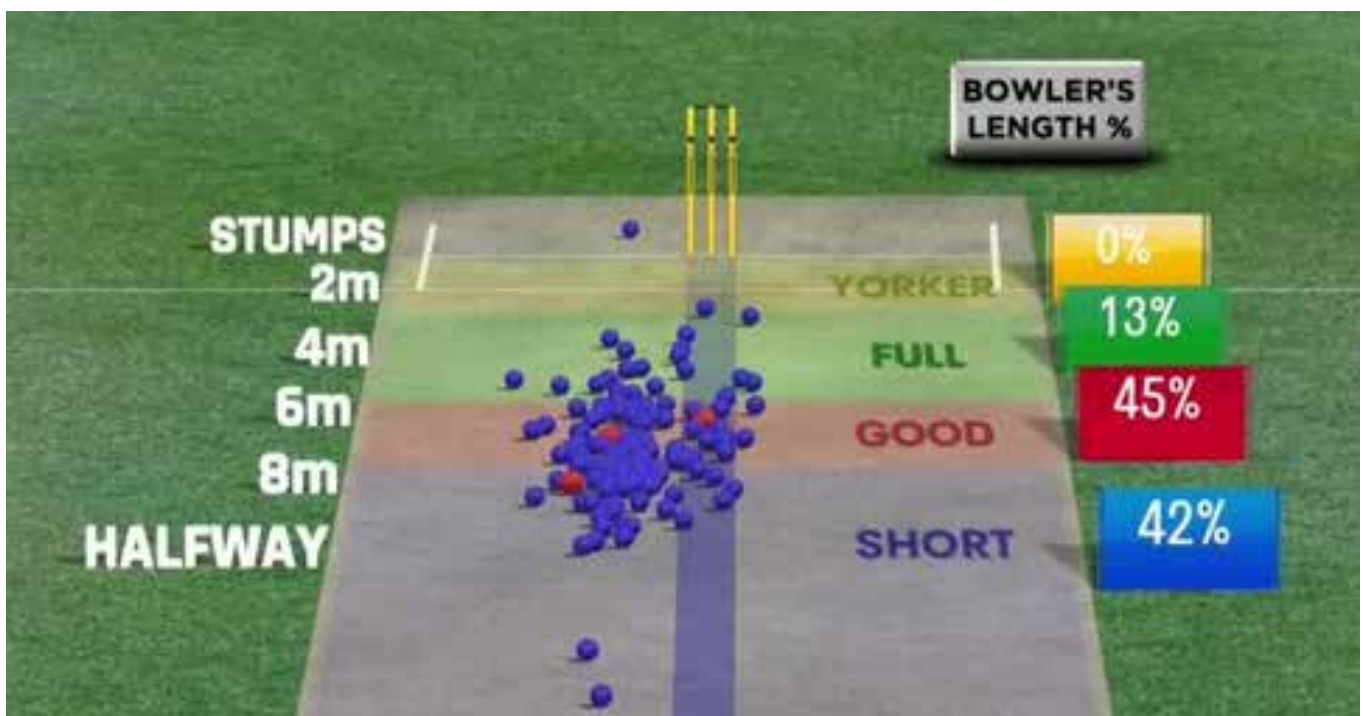
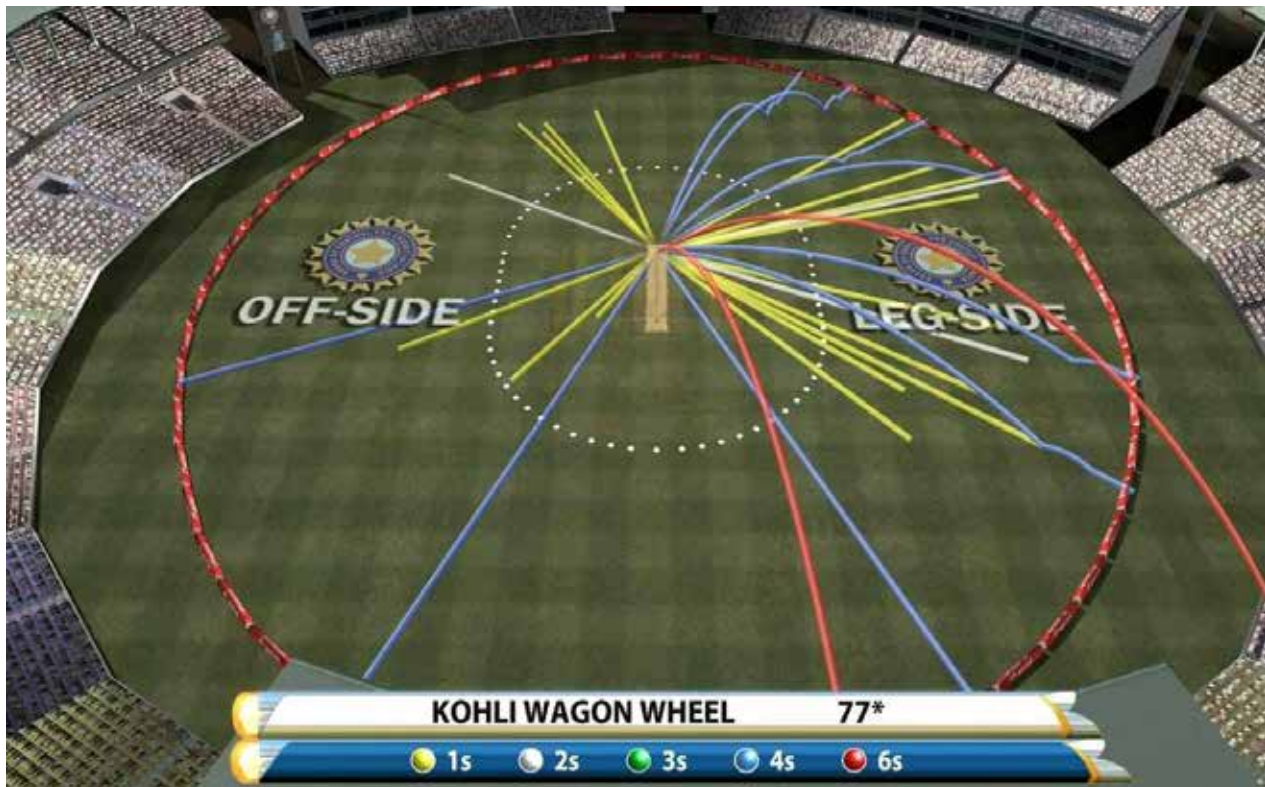


Figure 19: Wagon wheel visualisation in cricket



Platforms use advanced data analytics, data processing and other tools and technologies to present collected data meaningfully and engage their audience. Data and predictive analytics are driving innovation to further drive engagement. For instance, ball tracking software

can show the viewers a “what might have happened” perspective during the game. This is especially used during any Leg Before Wicket (LBW) appeal in cricket to show whether the ball was on track for LBW.

Figure 20 Hawkeye visualisation in cricket

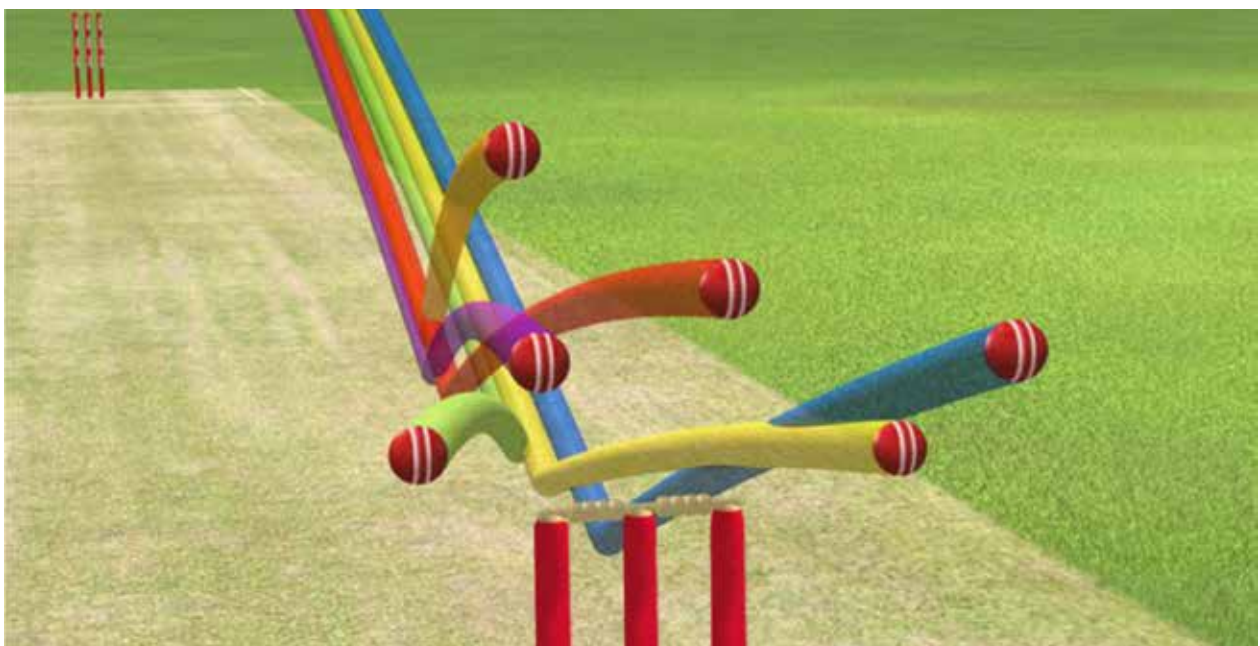


Figure 21: Live data for athlete performance and fitness tracking^[37]Image source^[58]

Similarly, live data for athlete performance tracking and fitness monitoring in a leading Kabaddi league in India allows team managers take timely decisions about the game strategy and offers athlete injury prevention.

Figure 22: Ball tracking in use at ATP Tata Open in Maharashtra

Image source^[59]

Figure 23: Ball tracking technology showing In or Out decision during a match

Image source^[60]

Tennis has gone ahead and used data and analytics for real-time decision-making in in-game situations. For instance, a ball tracking system was used for the first time in India during the ATP Tata Open in 2019. The technology offers slow-motion replays and accurate

bounce calculations. It uses ultra-calculation and advanced intelligence to offer real-time data about the game and player performance, making it extremely useful for decision-makers during breaks.

Contemporary fans are more engaged than ever with their favourite teams' competitions. They rely on data visualisation to enrich their experience, extending beyond mere observation of the game.

Advanced use of technology during live matches and post-matches to facilitate better decision-making

Technology is used not only for athlete performance analysis and training but also by officials to make key decisions during live matches.

For instance, technologies such as Video Assistant Referees (VAR) help referees make accurate decisions during games, making games fairer for both teams. This system has high-quality camera technology, making refereeing more precise and less affected by human error. Similarly, sports officials can use instant replay to evaluate calls made during a game and even slow the video down for closer examination. This technology has helped officials make more informed decisions during the match.

Technologies such as hawk-eye sensors are used to track balls and perform statistical analysis based on collected data to identify scenarios such as whether a cricket ball touched a bat before it was caught. The technology uses visual sensors to analyse the ball's trajectory and display its most likely path during a game. Hawk-eye sensors are often used in sports such as cricket, tennis, badminton and volleyball.

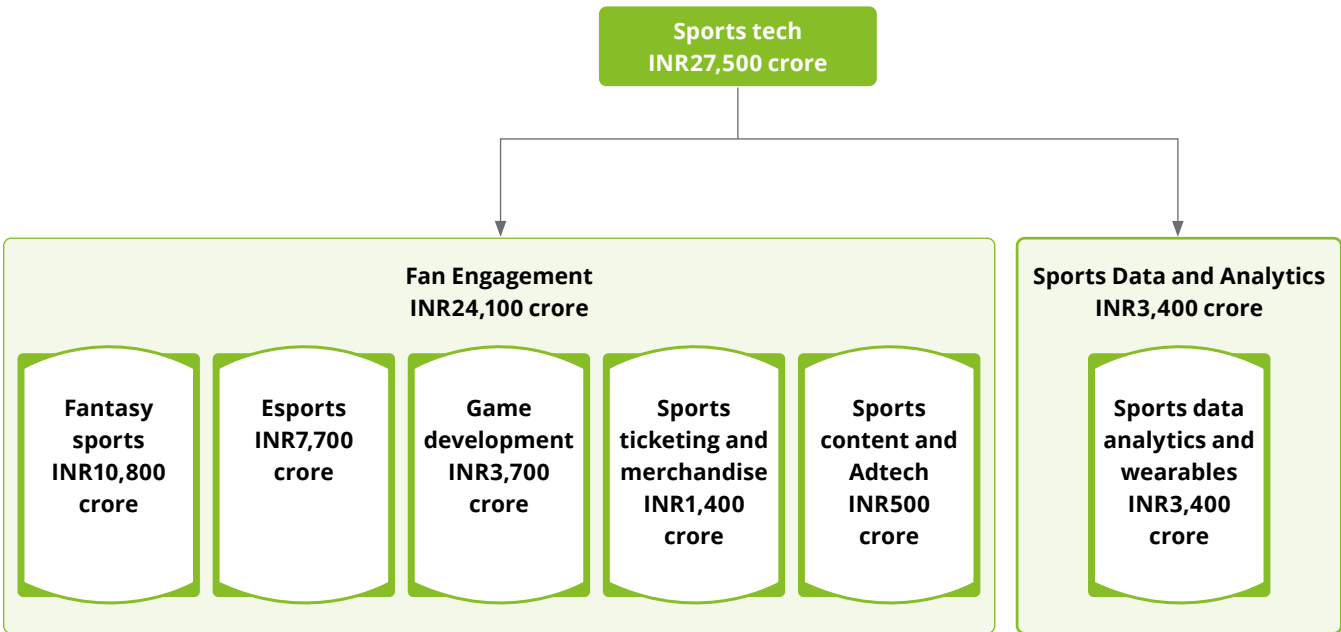
In addition to officiating matches, team officials and coaches can use AI-driven predictive analytics during matches to analyse competing team performance through captured videos. This technology allows them to gain deeper insights into opponents' strategies, strengths and vulnerabilities, allowing teams to customise or suggest possible strategy shifts based on their vulnerabilities. This tool is mainly used in football, table tennis and other sports. For instance, an Indian sports analytics start-up provides real-time athlete performance analysis, helping team officials and coaches make informed in-game decisions. Its AI-based app analyses match recordings to get detailed insights on game patterns and player performance, enabling coaches to compare performance stats over time and improve athlete performance.^[37]

Given technology's wide scope of implementation, the sports industry will likely look towards adopting more technological tools to improve overall performance and decision-making in sports.

5.2 Investment trends in sports tech (India perspective)

In recent years, India's sports tech landscape has undergone a transformative shift, evolving into a multi-billion-dollar industry. With the market revenues expected to reach INR49,500 crore by 2029, at a CAGR of 13 percent between 2024 and 2029, it is an increasingly attractive sector for investors.^[1]

Figure 24: Cumulative investments in sports tech sub-sectors in India between 2018 and 2023^[1]





The sports technology sector has seen a cumulative investment of INR27,500 crore between 2018 and 2023.^[4] This funding is not concentrated in a single area but instead supports various sub-categories contributing to the overall sports tech landscape. Sports-based gaming, and within that FS, has emerged as the largest recipient of investments, with a total of INR10,800 crore, capitalising on its ability to create an enthusiastic and engaged user base. Esports has also proved to be a major draw for investors, with investments totalling INR7,700 crore between 2018 and 2023. Game development companies that create interactive and immersive sports experiences have also secured noteworthy funding with investments totalling INR3,700 crore in the same period.^[1]

Despite a widespread slowdown in tech funding in recent years, the growth trajectory of the sports gaming category continues to attract interest from VCs and other investors, suggesting a positive outlook for the future. For instance, a major game publisher from South Korea has committed to investing ~INR 1,250 crore in Indian start-ups over the next 1–2 years. Additionally, it has announced the launch of an incubator that will provide investments ranging from INR0.4 crore to INR1.3 crore (US\$50,000 to US\$150,000) to 6–10 teams per year. Similarly, a Japanese mobile entertainment company has announced a ~INR400 crore (US\$50 million) corporate VC fund, focusing on early-stage gaming start-ups. An incubator programme by a leading global studio is focused on supporting emerging talent. The programme will provide a minimum of INR0.8 crore (US\$100,000) per developer, fostering new game development talent in the country. While these commitments look at the gaming sector as a whole, a significant portion of that is

expected to be channelled into Esports, FS and sports-themed games.^{[38] [39] [40]}

Sports data and analytics have also gained traction among investors, with companies receiving INR3,400 crore in total investments.^[1] As the adoption of wearable technology and the use of sensors and devices for sports expand its reach in India, particularly by major sporting teams and leagues, total investments in this space are expected to rise significantly.

Fan engagement start-ups have seen relatively modest private market investments in comparison, totalling INR1,800 crore.*^[1] However, bright spots such as online ticketing have emerged from the pandemic intact and are poised to raise record amounts.

Meanwhile, there has been growing interest from institutional capital, with new and incumbent funds building theses around the sports tech sector. Recently, VC firm “Centre Court Capital” launched an INR350 crore (US\$42 million) fund to invest in sports tech and gaming projects in India. Moreover, IIT-Madras has also declared funds up to INR5 crore to incubate novel sports-tech start-ups in India. Several well-established VC firms play a key role in perpetuating the sector's growth by backing promising sports tech start-ups.^{[41] [42]}

These significant investments suggest a bright future for sports technology innovation, with advancements likely to reshape how we experience and participate in sports.

*These investments only track publicly available information with respect to start-ups in this category, and do not track investments made internally by corporations on internal initiatives

6. Challenges

The sports tech sector faces several challenges as it continues to push the boundaries of technological innovation. Key challenges include integrating new technologies with existing systems, data privacy and security concerns, the cost of developing new technologies and a changing regulatory scenario. In addition, it also faces structural headwinds, such as access to technology and a digital divide, low internet penetration and obstacles in the ease of doing business.

Integrating new technologies and offering data security

One of the biggest challenges is integrating new technologies with existing infrastructure, systems and processes. The integration can be costly and time-consuming, requiring adequate resources. Also, data privacy and security have become critical concerns with the increasing use of wearable technology and the Internet of Things (IoT) in the sports industry. Protecting athlete and fan data is crucial to maintaining trust and confidence to develop a thriving ecosystem.

Ease of doing business

As the sector grows, building an ecosystem that fosters “ease of doing business” within the ecosystem is crucial. The private sector in India faces a range of issues that are also pertinent to the sports tech sector. These include a lack of adequate infrastructure, complex processes to enter a new business,

access to legal redressal and getting credit for business. The government has actively worked to solve these problems and has launched multiple initiatives to promote sports in the country. Although these actions have led to significant progress, much more is needed for the sports tech sector to achieve its full potential.

Access to technology

Access to technology in India depends on key parameters such as internet, smartphone penetration and pricing strategies.

While internet and smartphone penetration in India has improved, access to the latest technology for a large portion of the population still remains a challenge since the latest technologies are expensive. For instance, a smart cricket bat sensor used for advanced tracking and training costs over INR6 thousand. Similarly, a GPS-enabled smart vest costs over INR40 thousand, making it almost non-accessible for most of the players due to its cost.^[45]

The sports tech sector is still in its nascency and is looking to innovate and create solutions best fitted to the Indian market. While this mission provides an exciting opportunity for investors, regulators and sports organisations, these stakeholders must collaborate and overcome these challenges to provide a positive start-up environment.





7. Deep dive: Fantasy sports

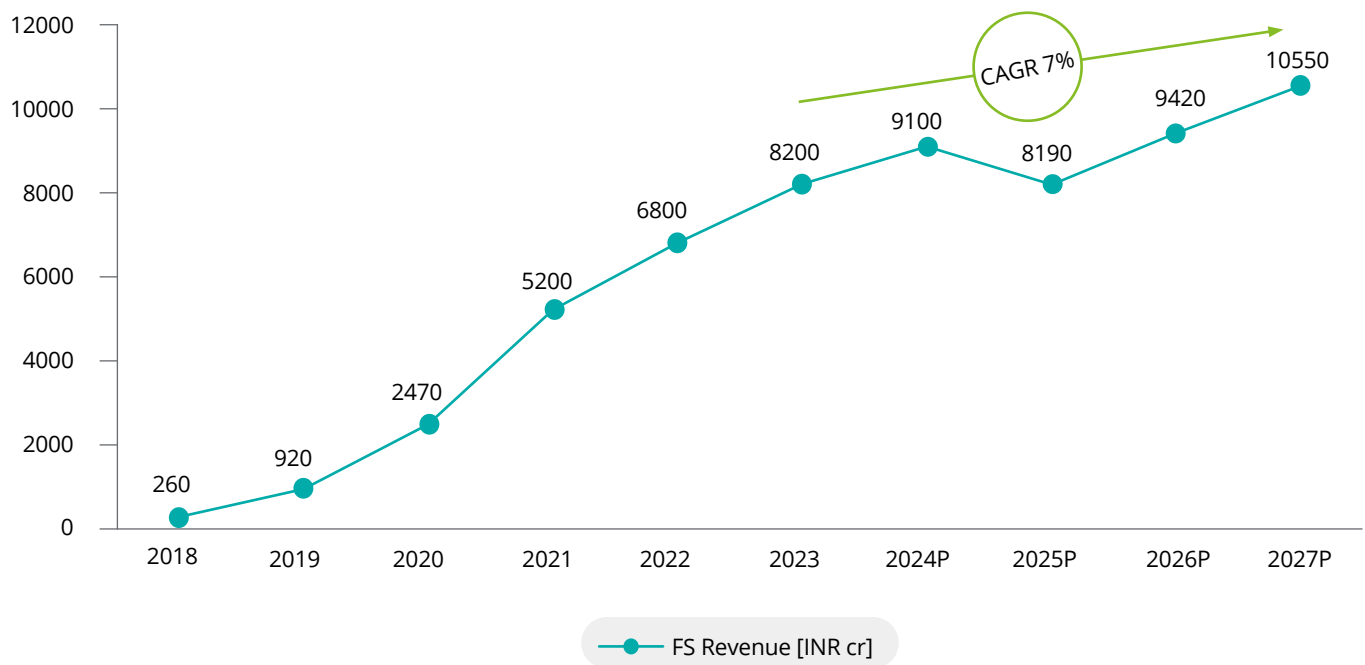
7.1 Contribution to the economy

The FS industry has gained significant traction among Indian gamers in recent years, transforming from a niche activity to a mainstream form of fan engagement. The FS industry is making a significant contribution to the Indian economy. This segment not only boosts direct revenue for sports leagues, federations and athletes but also fuels economic growth through related sectors such as digital advertising, data analytics and online payments. This sector's growth has increased investments in technology and talent development, creating employment opportunities and stimulating economic activity in related sectors.

7.1.1 Revenue and taxes

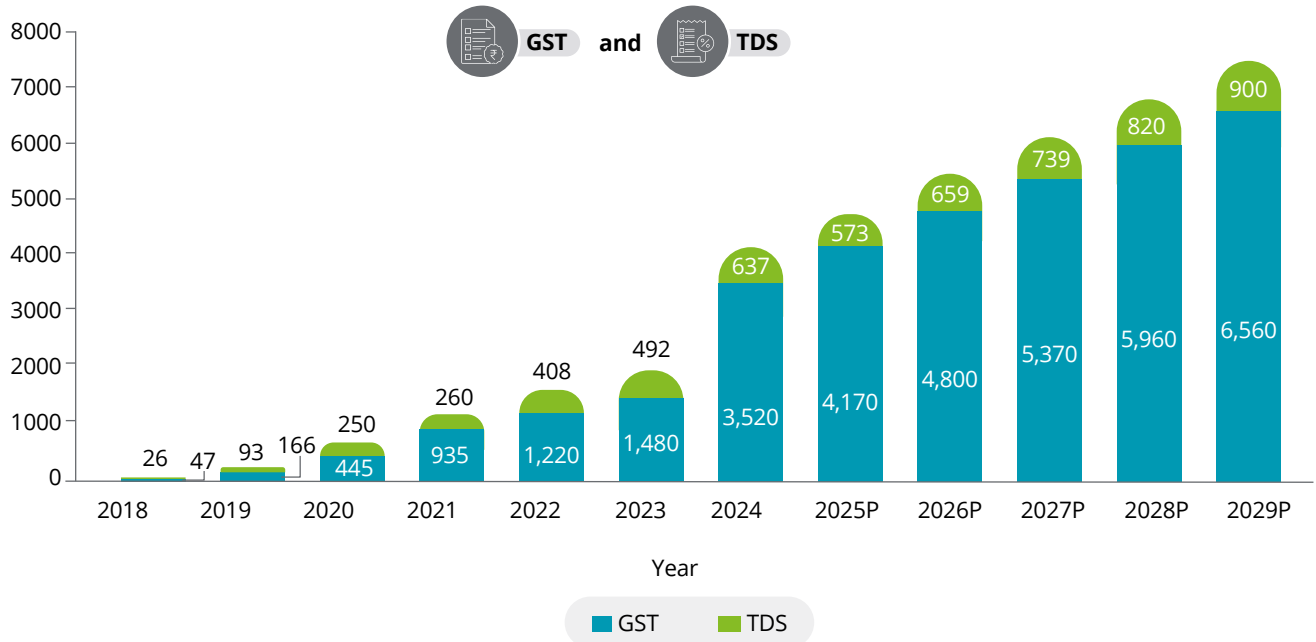
Between FY18 and FY23, the FS industry generated approximately INR23,860 crore in cumulative revenue. About INR4,290 crore was contributed as GST in the same period, with INR1,480 crore in FY23 alone. Under the new tax regime, it is projected that in FY24, the GST contribution will increase to INR3,520 crore, which will take the projected cumulative total to INR30,380 crore between FY24 and FY29.^[1]

Figure 25: Fantasy sports revenue and CAGR^[1]



Source: FIFS

Besides GST, FSPs deduct TDS on winnings and contribute to the economy through corporate taxes. From FY18 to FY23, the cumulative TDS contribution amounted to INR1,525 crore, with projections indicating it will increase for the period FY18 to FY29. Industry estimates suggest a cumulative contribution of about INR5,815 crore [GST+TDS] from FY18 to FY23 in this regard.^[1]

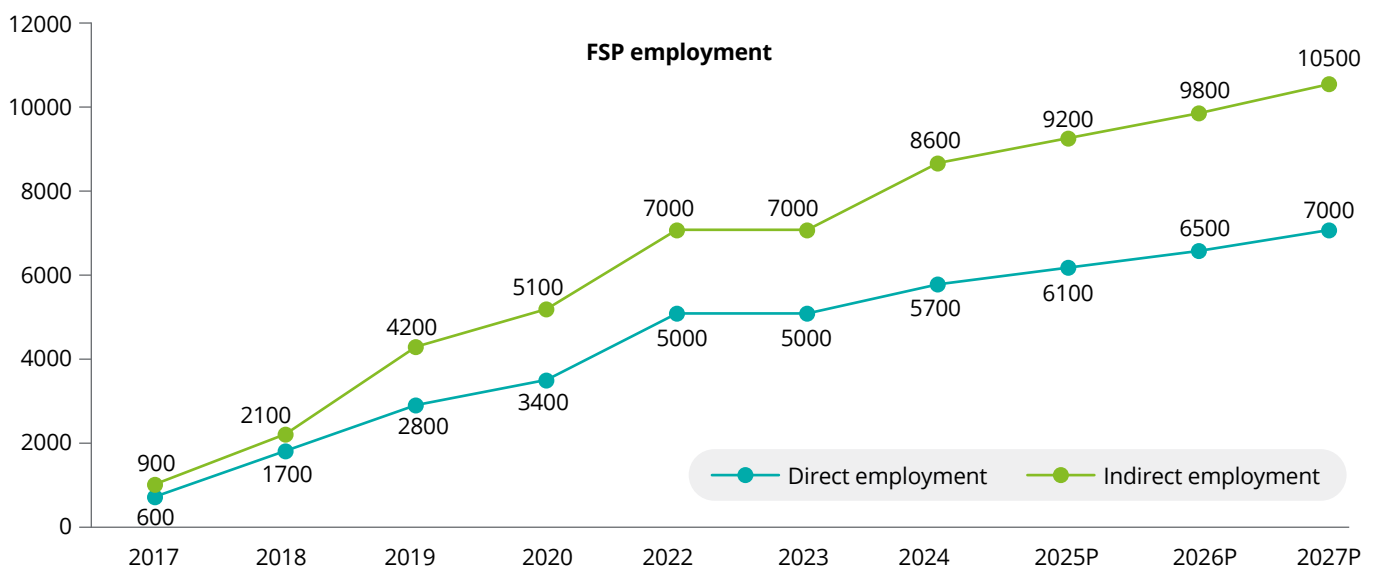
Figure 26: GST and TDS Contributions by FS in India (INR crore)

Source: FIFS

It is estimated that from 2018–2029, cumulative revenues could reach INR85,720 crore. In addition to this direct economic contribution, the FS industry also generated indirect revenue through various entities such as technology providers, sports scoring platforms,

advertising agencies, sports content aggregators, online retailers of sports merchandise and payment gateways, amounting to INR8,278 crore in FY24, which is estimated to be 90 percent of direct revenue.^[4]

7.1.2 Employment

Figure 27: Direct and Indirect Employment Generated by FSPs over the years.^[4]

Source: FIFS

In 2023, the FS industry made substantial contributions to the economy directly and indirectly. Notably, it fosters numerous start-ups in sports and technology, providing employment opportunities for many young Indians.

The FS industry employed an estimated 5,000 professionals in FY23 in technical roles, such as data scientists, data architects, mobile app developers, software engineers, cybersecurity experts and those proficient in AI and its subsets, including Web3 technologies.^[4] FSPs are heavily reliant on cutting-edge technology and innovative products. As a result, a significant portion of their workforce is concentrated within the technology and product development divisions. The technology department typically comprises 40–70 percent of an FSP's workforce. Looking ahead, FSPs seek skilled professionals with expertise in data warehousing, big data architecture, ML and systems design. In addition, FS companies also hire for various business functions to support their operations and

growth. These include roles in marketing and branding to promote the platform and acquire users, customer support to ensure a positive user experience, business development to forge collaborations and expand market reach, operations and strategy to optimise processes, legal and compliance to navigate regulatory landscapes, finance and accounting for financial management and human resources for recruitment and organisational development.

The economic impact of FSPs extends beyond the walls of the FS industry itself. These platforms function within a broader ecosystem encompassing various sectors, including payment gateways, technology support, marketing and customer service. This interconnectedness creates a ripple effect. For every job directly created by an FSP, an additional 1.5 jobs are generated in these supporting sectors, amplifying the overall impact. In FY23 alone, FSPs indirectly employed an estimated 7000 professionals, projected to surge to 10,500 by FY27.^[4]

Figure 28: Skills in demand



FSPs strategically focus on recruiting talent from prestigious institutions with expertise in AI and its subfields. The Indian Institutes of Technology Mumbai (Bombay, Kharagpur, Kanpur, Delhi, Madras and Guwahati), the National Institute of Design and the Indian School of Business are just a few examples of the top universities from which FSPs are actively recruiting. FSPs are not just talent scouts; they are also talent cultivators. FSPs are renowned for providing extensive learning opportunities and fostering a problem-solving environment for their employees. This commitment to nurturing fresh talent positions the FS industry as a highly attractive destination for individuals enthusiastic about careers in gaming, technology, or product management.

7.1.3 Sponsorships and collaborations

It is estimated that FSPs have invested about INR3,100 crore in FY23 in real-world sports through sponsorships and collaboration^[4]. Some of these funds are directed by state associations towards local sports development, which fosters regional participation. Moreover, profit-generating FSPs undertake CSR initiatives to support grassroots athletes and improve sports infrastructure. Through these efforts, FSPs contribute to bolstering the sports culture in India, spanning from grassroots initiatives to professional leagues.

7.1.4 Contribution to the growth of technology

The FS industry in India has contributed to the growth of technology in the country by driving innovation, boosting user engagement and fostering a start-up ecosystem. The rise of FSPs has led to the development of advanced mobile applications, data analytics tools and real-time performance tracking systems. As users participate in fantasy leagues, companies invest in ML and big data technologies to enhance user experience and provide personalised insights. This demand has spurred growth in areas such as payment gateways, cybersecurity and cloud computing, creating a robust technological infrastructure. Furthermore, the FS industry has encouraged investment in digital marketing and social media, pushing companies to adopt cutting-edge marketing strategies to engage users. The fusion of FS with technology enhances entertainment and drives broader tech advancements in India, paving the way for future innovations.

7.1.5 Contribution to the sports economy

The FS industry is significantly contributing to the sports economy in India by engaging over 200 million users across more than 300 platforms. With an estimated CAGR of 7 percent from 2024 to 2029, the sector is expected to reach a revenue of INR12,900 crore. [1] By allowing

fans to create teams and compete during live matches, the FS industry has enhanced sports consumption and attracted new fans. Integrating advanced technologies such as AI, ML, analytics and blockchain has further enriched the user experience, fostered innovation and built trust within the industry. Overall, the FS industry is playing a pivotal role in expanding the sports economy in India.

7.2 Consumer stories

The FS industry allows sports enthusiasts to actively manage virtual teams based on real-life player performances, fostering a deeper connection to the sport. Fans are motivated to follow a broader range of games and players, expanding their knowledge and interest beyond their favourite teams. Moreover, the platform providers push users to think strategically, requiring them to analyse statistics and make informed decisions, thus deepening their understanding of the game. The FS industry enriches the fan experience by offering an interactive and immersive way to interact with sports beyond spectating.

The following quotes showcase the real-life impact of the FS industry, highlighting how it has transformed passive spectators into active participants, enriching the overall fan experience:

“Fantasy Sports added extra excitement to my passion for sports. Picking players and strategising, and then hoping my team scores big is a whole new level of fun.

.....
Hormuz Billimoria, Banker

“Fantasy Sports allows me to apply all my sports knowledge gained through the years and closely connect to sports. Today, I know about most rising domestic players in Indian Cricket. Preparing my team is an interesting challenge and makes me feel like the team manager!

.....
Jayaprakash Reddy, Cricket Enthusiast



Playing and competing with many like-minded sports fans on FSPs has helped me make new friends. I now interact and empower the sports fan community with my tips and advice.

Viren Hemrajani, Marketing Manager



Fantasy Sports not only enables me to test all my analytical skills but keeps me abreast of all domestic tournaments and upcoming players.

Nikhil Singh, Entrepreneur



7.3 Impact of GST

7.3.1 28 percent GST on deposits

The recent hike in GST rates for online real-money gaming in India has sparked a wave of significant changes and challenges within the gaming industry. Previously set at 18 percent on GGR, the GST on online fantasy gaming has been raised to 28 percent on deposit, marking a significant increase. The GST Council's decision formalised through the CGST Amendment Act, 2023, and CGST Amendment Rules, 2023, effective from 1 October 2023, has significantly impacted industry and business unit economics. Notably, GST previously applied on the GGR, i.e., the revenue made by platforms after distributing winnings to players, will now be used exclusively for deposits.^[46]

This move has been received positively by the online gaming sector despite the business impact. It reduces ambiguity and introduces a clearer operational framework, enhancing stability and predictability for gaming companies.

While the increase in the GST provides regulatory certainty, it is important to note that the policy shift is not without its adverse impacts. Further, this hike in tax affects the ability of FSPs to reinvest in technology

and business development. FSPs have raised concerns about the cost of participation for users, potentially dampening user interest and affecting the overall growth trajectory of the sector.

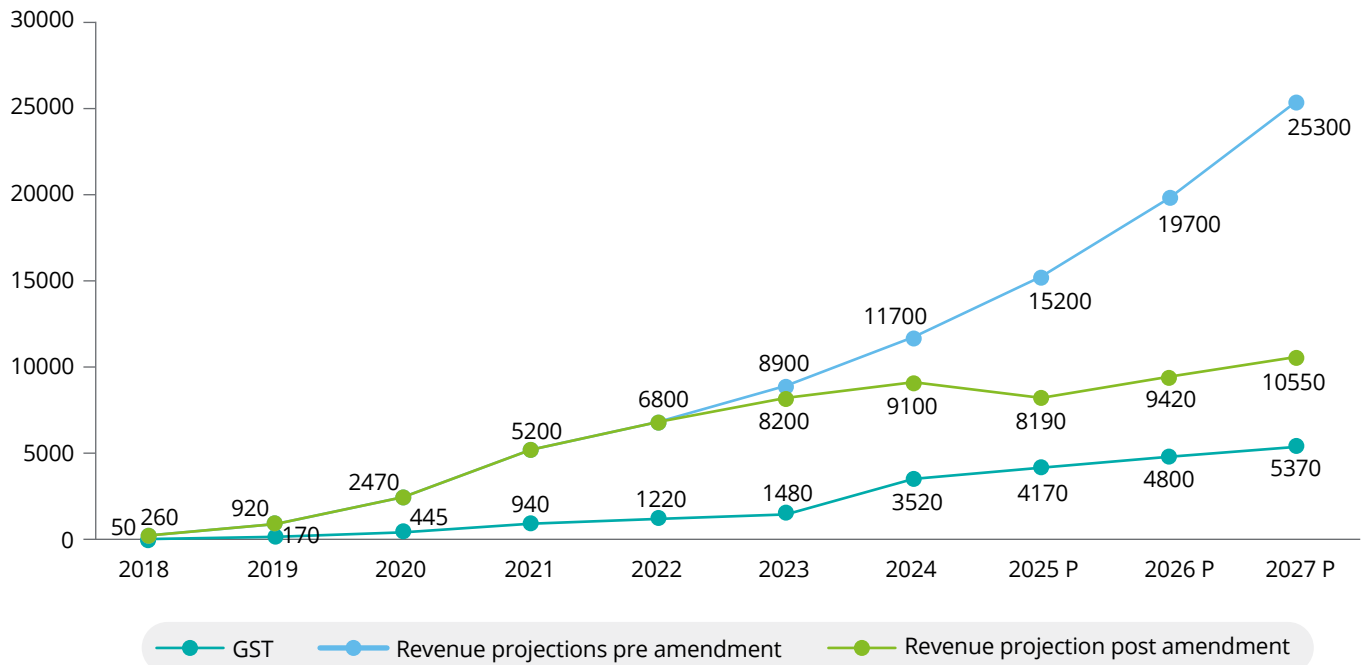
Per industry participants, consumer protection can also be impacted by the significant hike in GST as it incentivises users to migrate to unregulated, illegal platforms. These platforms undercut legal operators by offering lower fees that are unsustainable for mainstream platforms or operating tax-free, as they are not subject to the same regulations and do not pay their fair share of taxes. This shift to untaxed and unregulated alternatives exposes users to potential risks, as illegal platforms lack the consumer protections and codes of conduct found in legal FS platforms. The higher GST rate pushes users towards a less secure environment.

Beyond consumer protection, ensuring these operators fall under the purview of the government is in its interest as the new GST rate is estimated to lead to a leakage of INR2,29,600 crore annually in potential GST collections and a further INR1,59,408 crore per year in TDS collections. This translates to a total potential loss of INR3,89,008 crore (as per previous GST regime) annually in taxes attributable to these illegal platforms.^[3]

Prior to the hike in GST, revenue projections promised a flourishing industry. However, a sharp decline is now expected per industry participants, suggesting that it could be caused by less usage due to higher fees or a decrease in overall interest. It is crucial to highlight that nearly 50–55 percent of annual platform revenues are anticipated to be allocated towards mitigating GST impact, underscoring its substantial impact on the industry's financial health.

Given the shift in the tax bracket, the previously projected cumulative GST contribution of FS will rise in the next 3 years after the amendment. However, according to industry participants, in the longer term, there will be an eventual shortfall in GST collected due to a decline in the overall growth rate of FSP revenues.^[1]



Figure 29: Revenue projections pre and post GST amendment (INR crore)**Figure 30: GST Impact illustration on every INR 100 deposit**

	Pre-Oct2023	Post-Oct'23	
Deposit	₹100	₹100	
Spin	3.00	2.75	Spin has reduced post-revised GST due to a reduced prize pool and various terms and conditions regarding the usage of discounts that limit the users' ability to derive value from their deposits
CEA	₹300	₹275	
GGR%	15%	15%	
GGR	₹45.0	₹41.3	GGR is revenue to platform. GGR pre Oct is inclusive of GST
GST	₹6.9	₹21.9	1. User added 100 comprises of 78.12 deposit and 28 percent GST on it amounting to 21.9 which is payable to government at time of deposit 2. GST has grown by 300 percent
Prize Pool	₹55.0	₹36.9	
			Prize pool for customers has dropped by 33 percent

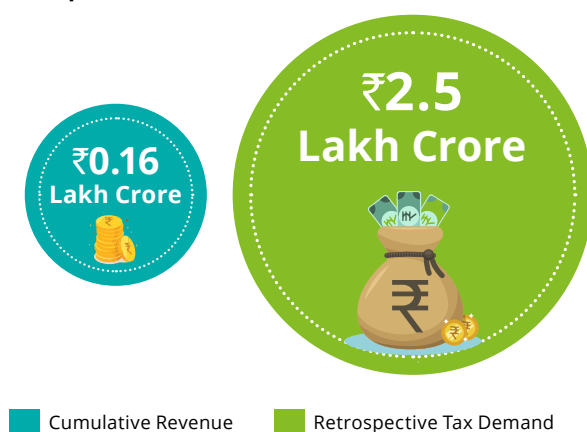
Note: In order to offset customer churn due to reduced prize pool most platforms are absorbing the impact of increased GST through various discounts/promotions/schemes because of which margins have dropped by ~50%

Source: FIFS

7.3.2 Retrospective tax demands

Tax authorities have issued notices demanding GST payments retrospectively from gaming companies for the period prior to the amendments [17–22]. Approximately 70 online gaming companies have been issued demands totalling INR1.12 lakh crore against total cumulative revenue of INR16,000 crore for the same period. The demands could cross INR2.5 lakh crore with interest and penalty. [47] As the tax demand is significantly higher than the company's total revenues, the ruling poses an existential threat to the industry.

Figure 31: Cumulative revenue for the period 2017-22 vs Retrospective tax demand



Beyond the obvious financial burdens and strain in financial planning, even the threat of retrospective taxation poses a problem for various reasons. It has created uncertainty among investors, deterring investments, which are down by 90 percent due to concerns over additional tax liabilities and compliance costs. Economically, these taxes disrupt business operations, potentially impacting employment, economic stability and overall business confidence. Internationally, such practices can tarnish India's image as a business-friendly destination, reducing foreign investor confidence and undermining its economic competitiveness on the global stage.

While notices are pending, companies may face challenges in investing in expansion and business growth due to the associated liabilities. Further, per industry participants, this hike in tax affects the ability of FSPs to reinvest in technology and business development. It also raises concerns about the cost of participation for users, potentially dampening user interest and affecting the overall growth trajectory of the sector.

In addition to the immediate, significant blow to the FSP's balance sheets, a chain of ripple effects could unfold, impacting the sector in the years ahead. According to the recent Economic Survey, online gaming contributed significantly to the growth of start-ups in India

(4 percent)^[4]. The pendency of notices and lack of funding are leading to the closure of most start-ups. These closures highlight the sector's ongoing adjustments to economic conditions and regulatory frameworks, impacting operational strategies across the industry.

Amid regulatory changes and financial challenges, the industry, once seen as a driver of job creation and economic growth, now faces a significant threat to the employment of over 150,000 highly skilled professionals in the technology sector.^[4] It is now at a critical juncture, where maintaining its competitive edge and appeal to investors is crucial.

The online gaming companies facing tax notices are all Indian firms, which limits their ability to invest in new games and opens the door for foreign competitors, particularly in the non-Real Money Gaming (RMG) sector. While Indian companies dominate the RMG segment, comprising over 60 percent of the market, the high taxation is expected to slow its growth, prompting RMG firms to shift investments toward non-RMG gaming. This situation poses a risk of write-off of over US\$2.5 billion in Foreign Direct Investment (FDI) and other investments in the RMG sector^[4]. It also challenges the vision outlined by the Hon'ble PM for the AVGC-XR (Animation, Visual Effects, Gaming and Comics – Extended Reality) sector, which aims to foster domestic game creation and attract investment. The government has recognised AVGC as a sunrise sector for job creation and investment; however, the gaming industry lacks funding. Resolving tax issues would enable RMG companies to use their resources and skilled talent to drive growth in India's gaming sector, aligning with both central and state AVGC policies and fulfilling the potential of the Media and Entertainment sector.

7.4 A Way Forward for Fantasy Sports

Multiple elements collectively shape the landscape of India's FS industry, where businesses operate and stakeholders make decisions that influence the sector's trajectory. From the impact of GST revisions on operational dynamics to the recent IT rules introduced by MEITY, alongside challenges posed by retrospective taxes, the industry faces multifaceted considerations. As the industry adapts to these changes, effective governance policies in collaboration with the industry to ensure the sector reaches its full potential becomes essential.

For the broader sports tech industry, the Draft National Sports Policy 2024 is crucial as it recognises the potential of technology to revolutionise Indian sports. By promoting data-driven decision-making, digital infrastructure development, innovation and sports science, the policy lays the groundwork for a technologically advanced sports ecosystem. This could

lead to improved athlete performance, better coaching strategies, enhanced fan experiences and a more efficient sports administration, elevating India's sporting prowess on the global stage.

7.4.1 Need for enactment of a comprehensive and robust national-level regulatory framework for online gaming in India

Introducing the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2023, by the Ministry of Electronics and Information Technology (MeitY) marks a significant step towards responsible online gaming in India. [48] However, the absence of designated Self-Regulatory Bodies (SRBs) hinders the full implementation of these rules, highlighting the urgent need for a comprehensive national-level regulatory framework.

Such a framework should encompass all online gaming intermediaries and cover free-to-play and RMGs. A crucial first step would involve mandatory self-registration, requiring intermediaries to submit essential details, such as their Corporate Identification Number, Director Identification Number, GSTIN and TAN. This registration process would be accompanied by an undertaking affirming compliance with existing laws and ensuring that no games offered are considered betting or gambling.

Implementing a robust regulatory framework is vital for protecting public interests, clarifying industry standards and fostering a safe online gaming environment in India.

The Indian FS industry faces significant challenges, particularly due to retrospective GST tax demands that burden legitimate operators. As businesses navigate these tax uncertainties, many struggle with profitability, especially those still in their growth phases. The recent developments from the Group of Ministers (GoM) and the GST Council have underscored the need for clarity and support in this evolving landscape.

To alleviate the financial pressures on these platforms, there is an urgent call for the GST Council to issue clear guidance regarding these retrospective demands. Adopting an "as is where is" approach, similar to the relief provided to other sectors, could greatly benefit the FS industry. Such clarification would not only ease the immediate financial strain but also foster a more stable environment for business, aligning with India's broader economic goals.

Investing in the FS industry is crucial for its sustained growth. Prioritising skills development initiatives, supporting research and enhancing infrastructure

can significantly bolster the industry. By learning from successful international models and creating a conducive environment for innovation, India can strengthen its position as a global leader in the digital economy.

7.4.2 Building industry-wide standards for responsible gaming

The growth of online gaming in India has also corresponded with the rise in concerns around risks stemming from excessive gaming. Much like other online activities, such as social media consumption, prolonged exposure to online gaming can also negatively impact individuals' health and impair their social functioning. Ensuring the safety of vulnerable users against the risk of addiction and financial harm through a robust, responsible gaming framework becomes critical. The Ministry of Electronics and IT, through the Gaming Rules [The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, as amended and notified on 6 April 2023], laid down a regulatory framework for responsible gaming based on global best practices.

The Gaming Rules prescribe due diligence requirements on online gaming intermediaries to ensure they provide users with a comprehensive set of responsible play measures. According to global best practices, the Gaming Rules aim to empower users to take control of their gameplay and make informed decisions concerning their spend and time. The Advertising Standard Council of India has also issued guidelines for the online gaming sector to ensure that advertisements remain truthful and responsible. Some key responsible gaming measures included within the Gaming Rules are described below.^[49]

7.4.3 A stable and viable taxation regime

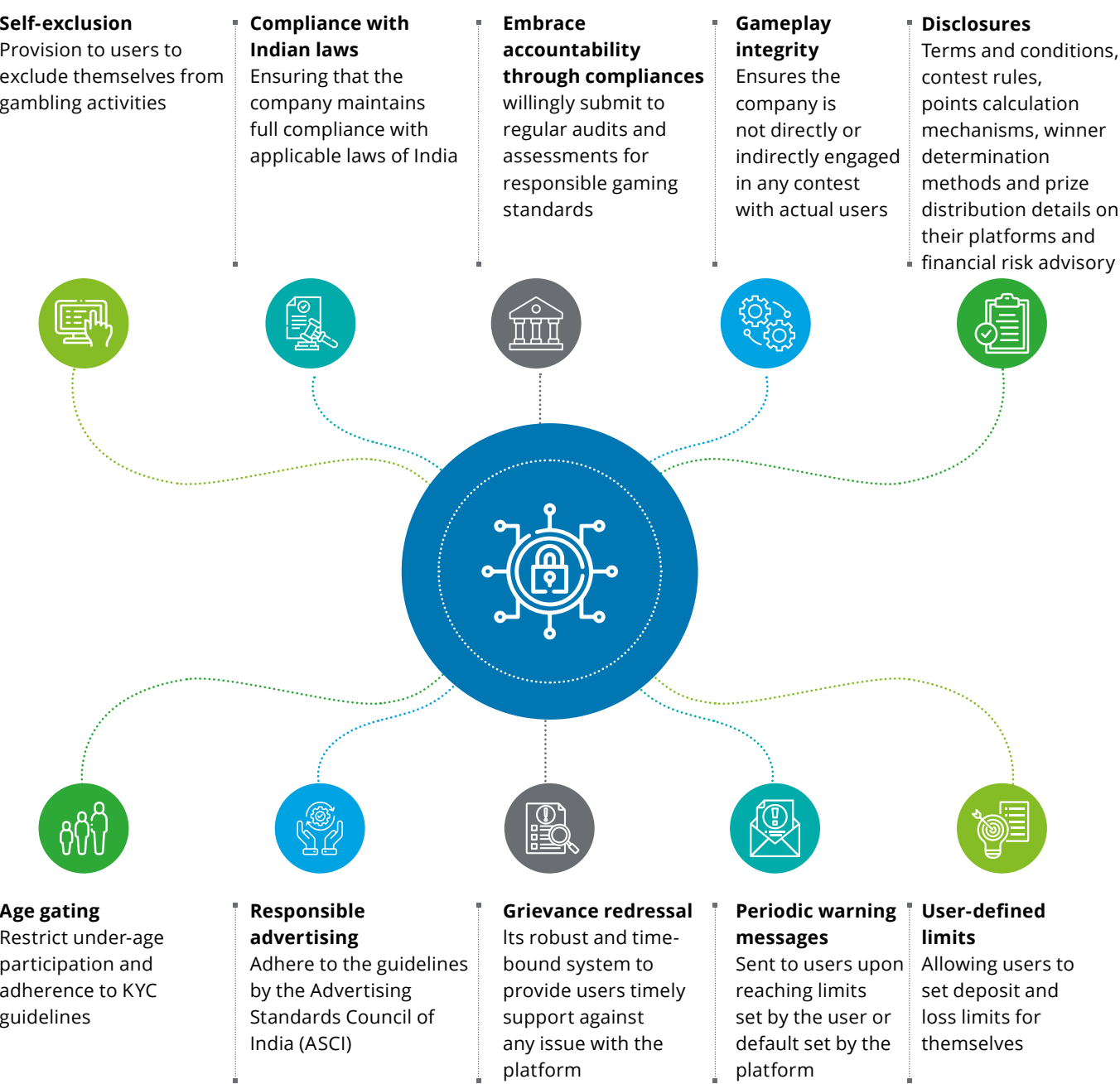
While the FS industry has been celebrated for its positive contribution to the broader economy, recent shifts in tax policies have introduced new challenges. The sector, known for fostering economic growth and job creation, now faces significant adjustments due to the recent hike in GST rates. The move aims to provide clarity and stability to the online gaming industry but raises concerns about its long-term impact on innovation and competitiveness. A predictable and sustainable tax policy is crucial for nurturing a thriving FS industry, which is vital to India's economic landscape by encouraging investment, fostering innovation and supporting sustainable growth. Without clear rules, unscrupulous methods and unfair advantages can flourish, punishing honest operators and eroding user trust in the FS industry. Without a nodal body to enforce

regulations, it is possible that concerning elements may not be held accountable for violations of user protection principles, leading to unfair practices and financial losses for users.

In addition, stakeholders in the FS industry suggest that aligning India's tax structure with global standards is crucial for enabling Indian game developers to compete

internationally. They highlight the importance of a tax framework that encourages innovation, facilitates industry expansion and strengthens India's role in the global gaming landscape. Such alignment could enhance investor confidence while fostering sustainable growth and employment opportunities within the FS industry, supporting its ongoing contribution to the Indian economy.

Figure 32: FIFS guidelines for responsible play ^[49]





8. Concluding remarks

The advancement of technology is fundamentally transforming how fans interact with sports content, engage in gaming and support their favourite teams. This shift is creating new avenues for growth and innovation in the sports technology sector and fostering an increasing focus on a diverse range of sports beyond cricket. Integrating advanced scouting methods with technology has become crucial as India progresses in its sporting prowess, enhancing athlete performance, improving safety and refining team dynamics. Technologies such as Video Assistant Referee systems use data analytics and multiple camera angles to enhance officiating accuracy. At the same time, wearable devices and virtual reality training environments provide athletes with critical performance insights and immersive practice opportunities. India's burgeoning sports tech landscape is also witnessing a surge in start-ups focusing on these innovations, supported by initiatives such as the IIT Madras Sports Tech Start-Up Conclave, which aims to incubate homegrown tech solutions for sports.

The fantasy sports industry is a prime example of how technology can enhance fan interaction with sports,

engaging millions of fans across India. FS not only creates significant economic impact but also champions technological innovations and inspires the growth of numerous successful start-ups. Additionally, it indirectly boosts sports viewership and fan engagement, leading to increased revenue streams for sports leagues, teams and athletes. Despite its growth, the FS industry faces challenges, such as recent changes in tax regulations that have escalated operational costs and hampered sectoral growth. A supportive regulatory environment is essential for unlocking the full potential of FS in India, aligning with the government's vision for a robust digital economy and advancing India's aspirations to become a sporting powerhouse.

Government interventions such as The Draft National Sports Policy 2024 have supported the sports tech ecosystem. These policies promote innovation and enhance the overall sports landscape. To ensure India grows into a sporting powerhouse, the government must strengthen its sports infrastructure, protect intellectual property and foster a conducive environment for innovation through policies and regulations that encourage start-ups and technology companies to thrive.



9. References

- [1] Deloitte, Deloitte analysis.
- [2] Capgemini Research institute, "Emerging technologies in sports - Reimagining the fan experience".
- [3] BrandWagon, "Offshore betting platforms to mushroom in the absence of regulating authorities, reveals Think Change Forum report," 2024. [Online]. Available: <https://www.financialexpress.com/business/brandwagon-offshore-betting-platforms-to-mushroom-in-the-absence-of-regulating-authorities-reveals-think-change-forum-report-3280423/>.
- [4] Federation of Indian Fantasy Sports, FIFS.
- [5] The Hindu, "The Hindu businessline," How GenZ will drive culture in 2024, pp. <https://www.thehindubusinessline.com/catalyst/how-genz-will-drive-culture-in-2024/article67624184.ece>, Dec 2023.
- [6] Ormax report, "We, the sports fans of India," <https://www.ormaxmedia.com/insights/stories/we-the-sports-fans-of-india.html>, 2022.
- [7] Ampere Analysis, [Online]. Available: <https://www.adgully.com/over-90-of-indian-fans-will-pay-to-watch-live-sports-study-145372.html>.
- [8] fuboTV official press release, "fuboTV Announces Completion of Edisn.ai Acquisition," Dec 2021. [Online]. Available: [https://ir.fubo.tv/news/news-details/2021/fuboTV-Announces-Completion-of-Edisn.ai-Acquisition/default.aspx#:~:text=NEW%20YORK%2D%2D\(BUSINESS%20WIRE,technologies%20based%20in%20Bangalore%2C%20India..](https://ir.fubo.tv/news/news-details/2021/fuboTV-Announces-Completion-of-Edisn.ai-Acquisition/default.aspx#:~:text=NEW%20YORK%2D%2D(BUSINESS%20WIRE,technologies%20based%20in%20Bangalore%2C%20India..)
- [9] A. Bhalla, "MaxView: game-changing, literally," MaxView: game-changing, literally, pp. <https://blog.hotstar.com/maxview-game-changing-literally-c793751c2d9f>, Mar 2024.
- [10] Deloitte, "Sports Tech Innovation in the Start-up Nation," Deloitte Israel, 2017.
- [11] Data Sports Group, "Fan Engagement and The Second Screen," Fan Engagement and The Second Screen, pp. <https://datasportsgroup.com/news-article/31796/fan-engagement-and-the-second-screen/#:~:text=It's%20estimated%20that%20over%2080,a%20live%20sports%20TV%20broadcast.&text=4.,played%20simultaneously%20and%20so%20on.,> Sep 2019.
- [12] E. staff, "<https://www.exchange4media.com/media-others-news/star-sports-launches-star-deals-to-boost-second-screen-engagement-for-ipl-on-tv-134065.html>," <https://www.exchange4media.com/media-others-news/star-sports-launches-star-deals-to-boost-second-screen-engagement-for-ipl-on-tv-134065.html>, pp. <https://www.exchange4media.com/media-others-news/star-sports-launches-star-deals-to-boost-second-screen-engagement-for-ipl-on-tv-134065.html>, Apr 2024.
- [13] S. Jayan, "Top 10 Generative AI Adoptions by Indian Consumer Companies," Aanyticsindiamag.com, pp. <https://analyticsindiamag.com/ai-mysteries/top-9-generative-ai-adoptions-by-indian-consumer-companies-in-2023/>, Jan 2024.
- [14] J. Vaidya, "Is India ready for licensed sports merchandise?," Theplaybook, pp. <https://theplaybook.thesignal.co/p/india-licensed-sports-merchandise-fancode-souled-store-playr>, Aug 2023.
- [15] ICC, "ICC unveils revolutionary 'ICC Immersive' app for fans," Jun 2024. [Online]. Available: <https://www.icc-cricket.com/tournaments/t20cricketworldcup/news/icc-unveils-revolutionary-icc-immersive-app-for-fans>.
- [16] Tech Mahindra, Tech Mahindra Global Chess League London Edition, <https://www.techmahindra.com/insights/press-releases/tech-mahindra-global-chess-league-host-its-second-edition-london/>, 2024.
- [17] J. Vaidya, "Inside JioCinema's multi-cam IPL streaming," Theplayook, pp. <https://theplaybook.thesignal.co/p/jio-cinema-multi-cam-ipl>, Apr 2023.
- [18] YouGov, "YouGov Report 2023," YouGov, 2023.
- [19] The Times of India, "Virat Kohli surpasses Neymar to become the second most follo ..," The Times of India, pp. <https://timesofindia.indiatimes.com/sports/off-the-field/virat-kohli-surpasses-neymar-to-become-the-second-most-followed-athlete-on-x/articleshow/110724382.cms>, Jun 2024.

- [20] A. Sharma, "Neeraj Chopra's social media valuation jumps to a total of Rs 428 crores following Tokyo gold medal," Mykhel.com, pp. <https://www.mykhel.com/more-sports/neeraj-chopra-s-social-media-valuation-jumps-to-a-total-of-rs-428-crores-following-tokyo-gold-medal-174823.html>, Sep 2021.
- [21] L. Grotkamp, "The Importance of Social Media for Athletes," Sportsfive.com, pp. <https://sportfive.com/beyond-the-match/insights/importance-social-media-for-athletes>, Jul 2023.
- [22] Greenfly.com, "Social Media in Sports: Driving Fan Engagement," Greenfly.com, pp. <https://www.greenfly.com/blog/social-media-in-sports/>.
- [23] News18, "Indian Football: Moving Beyond its Existential Crisis, AIFF Now Looks at 'Vision 2047'," News18, pp. <https://www.news18.com/news/football/indian-football-moving-beyond-its-existential-crisis-aiff-now-looks-at-vision-2047-6944371.html>, Jan 2023.
- [24] TISA Group, "IoT in Sports: How Smart Stadiums are Making a Big Difference," TISA, pp. <https://www.tisagroup.ch/iot-in-sports-smart-stadiums/>, Apr 2023.
- [25] Boston Institute of Analytics, "Decoding Dream11: The Tech Powerplay Behind Your Fantasy Sports Feats," Boston Institute of Analytics, pp. <https://bostoninstituteofanalytics.org/blog/decoding-dream11-the-tech-powerplay-behind-your-fantasy-sports-feats/>, Apr 2024.
- [26] F. Games, "Case Studies: Successful Implementation of Blockchain in Fantasy Sports," Medium, pp. <https://fantio.medium.com/case-studies-successful-implementation-of-blockchain-in-fantasy-sports-50f7294012b3>, Apr 2024.
- [27] Statista, "<https://www.statista.com/statistics/1263243/india-esports-viewership/>," <https://www.statista.com/statistics/1263243/india-esports-viewership/>, [Online]. Available: <https://www.statista.com/statistics/1263243/india-esports-viewership/>.
- [28] battlexo, "<https://esports.battlexo.com/>," battlexo, [Online]. Available: <https://esports.battlexo.com/>.
- [29] Cyber Media Research, "Esports Companies In India Paving The Ecosystem To Grow Sustainably," CMR India, pp. <https://cmrindia.com/esports-companies-in-india-paving-the-ecosystem-to-grow-sustainably/>, Feb 2024.
- [30] Statista, "<https://www.statista.com/topics/9737/esports-in-india/#topicOverview>," [Online]. Available: <https://www.statista.com/topics/9737/esports-in-india/#topicOverview>.
- [31] Statista, "<https://www.statista.com/statistics/1263243/india-esports-viewership/#:~:text=eSports%20viewership%20in%20India%20FY%202019%2D2025&text=In%20financial%20year%202021%2C%20there,almost%20double%20that%20of%202019.>," [Online]. Available: <https://www.statista.com/statistics/1263243/india-esports-viewership/#:~:text=eSports%20viewership%20in%20India%20FY%202019%2D2025&text=In%20financial%20year%202021%2C%20there,almost%20double%20that%20of%202019.>.
- [32] T. L. Roy, "Why is esports becoming a significant part of sports marketing in India?," Forbes India, pp. <https://www.forbesindia.com/article/storyboard18/why-is-esports-becoming-a-significant-part-of-sports-marketing-in-india/77015/1>, Jun 2022.
- [33] Scoutme, "<https://scoutme.in/about-us>," [Online]. Available: <https://scoutme.in/about-us>.
- [34] A. Peter, "AIFF launches 'ScoutMe' app developed by 17-year-old Kush Pandey," Goal.com, pp. <https://www.goal.com/en-in/news/aiff-scoutme-app-indian-football-kush-pandey/ojio52ssskhw1a5vwiz6f0f9w>, Mar 2018.
- [35] Footrax, "<https://footrax.com/>," <https://footrax.com/>, [Online]. Available: <https://footrax.com/>.
- [36] Indiaai.gov.in, "Anil Kumble's technology start-up Spektacom Technologies launched the Power Bat," Indiaai.gov, pp. <https://indiaai.gov.in/case-study/anil-kumble-s-technology-start-up-spektacom-technologies-launched-the-power-bat>, Aug 2019.
- [37] StartUS Insights, "Explore the Top 8 Sports Industry Trends & Innovations in 2024," StartUS Insights, pp. <https://www.startus-insights.com/innovators-guide/sports-tech-trends/>, Aug 2023.
- [38] S. Saha, "Gaming major Krafton to invest another \$150 million in Indian startups," The Economic Times, pp. <https://economictimes.indiatimes.com/tech/startups/gaming-major-krafton-to-invest-another-150-million-in-india/articleshow/102580777.cms?from=mdr>, Aug 2023.
- [39] T. Rudra, "Japan's MIXI Launches \$50 Mn CVC Fund For Indian Digital Entertainment Startups," Inc42, pp. <https://inc42.com/buzz/japans-mixi-launches-50-mn-cvc-fund-for-indian-digital-entertainment-startups/>, Aug 2023.
- [40] S. Playstation, "india-hero-project," Sony Playstation, [Online]. Available: <https://www.playstation.com/en-in/local/india-hero-project/>.

- [41] L. Choudhary, "Indian VC firm bets on sports tech, gaming with \$42m fund," Techinasia, pp. <https://www.techinasia.com/centre-court-capital-bets-on-indian-gaming-with-42m-fund>, Apr 2024.
- [42] The Economic Times, "IIT-Madras to provide funds to incubate sports-tech startups," The Economic Times, pp. <https://economictimes.indiatimes.com/tech/startups/iit-madras-to-provide-funds-to-incubate-novel-sports-tech-startups/articleshow/110450569.cms?from=mdr>, May 2024.
- [43] S. Kemp, "DIGITAL 2024: INDIA," Datareportal, pp. <https://datareportal.com/reports/digital-2024-india>, Feb 2024.
- [44] A. Malhotra, "Bridging The Urban-Rural Digital Divide In India," Inc42, pp. <https://inc42.com/resources/bridging-the-urban-rural-digital-divide-in-india/#:~:text=According%20to%20the%20latest%20National,to%2059%25%20of%20urban%20adoption.>, Mar 2024.
- [45] "https://www.str8bat.com/products/str8bat-cricket-bat-sensor," str8bat, [Online]. Available: <https://www.str8bat.com/products/str8bat-cricket-bat-sensor>.
- [46] pib.gov.in, "Recommendations of 51st GST Council Meeting," pib.gov.in, p. <https://pib.gov.in/PressReleasePage.aspx?PRID=1945208>, Aug 2023.
- [47] ETLegalWorld, "India's online gaming sector needs tax certainty against retrospective taxation," 2024. [Online]. Available: <https://legal.economictimes.indiatimes.com/news/law-policy/indias-online-gaming-sector-needs-tax-certainty-against-retrospective-taxation/110994477>.
- [48] MeitY, "The Information Technology (Intermediary Guidelines and Digital Media Ethics Code)," 27 12 2022. [Online]. Available: <https://www.meit.gov.in/writereaddata/files/IT%20Rules%2C%202021%20with%20proposed%20amended%20texts%20in%20colour.pdf>.
- [49] "FIFS, Responsible Gaming," FIFS, [Online]. Available: <https://fifs.in/responsible-gaming/>.
- [50] The Hindu, "Dream11 to shut down corporate venture capital arm," Businessline, pp. <https://www.thehindubusinessline.com/companies/dream11-to-shut-down-corporate-venture-capital-arm/article67416716.ece>.
- [51] V. SN, "MPL-backed web3 fantasy platform Striker to shut down operations," Moneycontrol, pp. <https://www.thehindubusinessline.com/companies/dream11-to-shut-down-corporate-venture-capital-arm/article67416716.ece>, Dec 2023.
- [52] ETtech, "MPL-backed Web 3 fantasy platform Striker shuts down operations," ETtech, pp. <https://economictimes.indiatimes.com/tech/startups/mpl-backed-web-3-fantasy-platform-striker-shuts-down-operations/articleshow/106021436.cms?from=mdr>, Dec 2023.
- [53] Invest India, "Invest India - Sports sector," Invest India - The Indian govt. authority, [Online]. Available: <https://www.investindia.gov.in/sector/sports>.
- [54] T. E. Times, "Gameskraft to discontinue super app Gamezy amid Rs. 21,000 crore tax demand," 2023. [Online]. Available: <https://economictimes.indiatimes.com/tech/technology/gameskraft-to-discontinue-super-app-gamezy-amid-rs-21000-crore-tax-demand/articleshow/103719890.cms>.
- [55] Statsperform, [Online]. Available: <https://www.statsperform.com/resource/how-data-can-transform-the-fan-experience-in-sports-stadiums/>.
- [56] "Offshore betting platforms to mushroom in the absence of regulating authorities, reveals Think Change Forum report," Financial Express, 13 March 2024. [Online]. Available: <https://www.financialexpress.com/business/brandwagon-offshore-betting-platforms-to-mushroom-in-the-absence-of-regulating-authorities-reveals-think-change-forum-report-3280423/>.
- [57] Deloitte, Deloitte analysis.
- [58] <https://www.sportskpi.com/athlete-fitness-monitoring-in-pro-kabaddi-my-experiences/>
- [59] <https://www.hindustantimes.com/pune-news/tata-open-maharashtra-fox-vs-hawk-all-eyes-on-tennis-technology-war/story-lxGmynoMo5bj3toVtGnBdL.html>
- [60] <https://phys.org/news/2019-03-moment-truth-tech-firms-tennis.html>

10. Glossary

Abbreviation	Expansion
AI	Artificial Intelligence
AR	Augmented Reality
AVGC	Animation, VFX, Gaming, Comics
CAGR	Compounded Annual Growth Rate
CEA	Contest Entry Amount
CGE	Contest Generation Engine
CSR	Corporate Social Responsibility
FC	Football Club
FDI	Foreign Direct Investment
FS	Fantasy Sports
FSP	Fantasy Sports Platform
FY	Financial Year
GGR	Gross Gaming Revenue
GST	Goods and Services Tax
INR	Indian Rupee
IPL	Indian Premier League
ISL	Indian Super League
IT	Information Technology
KYC	Know Your Customer
ML	Machine Learning
NBA	National Basketball Association
NFT	Non-Fungible Token
NITI	National Institute for Transforming India
OTT	Over the Top
TDS	Tax Deducted at Source
TMT	Telecom, Media, and Technology
UK	United Kingdom
UPI	Unified Payments Interface
USA	United States of America

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Acknowledgements

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Swarup Sonar
Mou Chakravorty
Harsh Trivedi



Formed in 2017, the Federation of Indian Fantasy Sports (FIFS) earlier known as the Indian Federation of Sports Gaming IFSG, India's first and only Fantasy Sports self-regulatory industry body, was established to protect consumer interest and create standardized best practices in the Fantasy Sports industry.

FIFS aims to create a thriving ecosystem for fantasy sports users and operators by creating guidelines for a common set of practices, setting standards of operation and creating a regulatory framework to protect the fantasy sports user and operator interests. FIFS works with key industry stakeholders and liaisons with the policymakers to create a robust governance structure to support the sustained growth of the industry.



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