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# Artificial Intelligence and Trademark Challenges in the Sport Industry

**Suji Kim and John Grady**

This study explores the intersection of artificial intelligence (AI) and trademark law, focusing on the legal implications of AI-driven brand management in the sport industry. As AI technologies increasingly shape marketing strategies, particularly through fan engagement and content creation, they present new legal challenges, especially concerning trademark infringement, false endorsement, and the protection of athletes' name, image, and likeness (NIL) rights. The study analyzes key legal issues arising from AI's role as both a tool and a potential legal actor in brand management.

Through advanced case law analysis, this study explored how trademark law is adapting to rapid technological changes. By examining key court cases, the research aimed to uncover how courts have navigated the challenges posed by AI in trademark disputes. The findings highlight the need for sport organizations to adopt proactive legal safeguards in their digital partnerships, ensuring that AI tools and platforms adhere to clear legal frameworks for brand protection. The study provides insights into how sport organizations can navigate the emerging legal landscape to protect their brands and athletes' identities in an increasingly AI-driven marketplace.

Keywords: trademark law, artificial intelligence (AI), brand management

## Introduction and Background of Study

In the dynamic and competitive sport industry, effective management of brand assets is essential for organizations seeking to establish and maintain a distinct market presence. The distinct identities of sport teams, leagues, athletes, and event sponsors are closely tied to their brand value, making intellectual property (IP) protection

Suji Kim, LLM, PhD, earned her PhD from the University of South Carolina and is currently a JD candidate at the University of Minnesota Law School. Her research focuses on intellectual property, sport sponsorship, and the legal governance of sport organizations. Email: kim01522@umn.edu

John Grady, JD, PhD, is a Carolina Trustees Professor in the David and Nicole Tepper Department of Sport and Entertainment Management at the University of South Carolina. His research focuses on legal issues in sponsorship, especially around the Olympic Games, as well as enhancing stadium accessibility for people with disabilities. Email: jgrady@sc.edu

an essential component of their business strategies (Robson et al., 2020) and likely confirms the team's IP is typically the most valuable asset. Trademarks play a particularly significant role in the sport industry's portfolio of IP, serving as a critical tool for distinguishing between competing products. Trademarks also facilitate consumer loyalty by fostering brand recognition and emotional connections, essential drivers of value in the sport sector (Keller & Lehmann, 2006; Krasnikov et al., 2009; Robson et al., 2020). By securing these assets, sport organizations can protect their market positions and capitalize on their brand equity in an increasingly globalized and digitalized marketplace.

Legal protections provided by U.S. trademark law under the Lanham Act enable sport organizations to defend their trademarks against unauthorized use while cultivating strong associations with fans and consumers. Trademarks have traditionally been utilized to distinguish a brand's goods and services from those of competitors. However, technological advancements, such as the rise of digital platforms and the growth of online and virtual marketplaces driven by new technologies like artificial intelligence (AI), have expanded the ways in which trademarks are used and potentially infringed. As digital innovations continue to transform how brands engage with consumers, the implications for trademark rights have become significantly more complex.

The purpose of this study was to critically analyze the evolution of trademark law through analysis of case law. The study focused on how existing legal cases have addressed the complex challenges of digital advancements and brand protection. By analyzing established legal frameworks from trademark law as well as existing case law that is creating new precedent, this research explores how traditional trademark principles have been adapted to address the challenges posed by evolving technologies, including Internet, social media, and virtual platforms, and how they continue to be adapted to handle the AI-related trademark issues. The study also focused on tracing the development of these legal principles from early cases involving brands in the sport industry, as well as other industries where these issues emerged earlier and more rapidly, including general consumer brands. The researchers examined recent conflicts surrounding digital technologies and AI to assess how future courts may handle issues related to the replication of logos, brand elements, and the creation of new content that could infringe upon or dilute established trademarks within the sport sector. Finally, this study also examined how emerging trends in case law may necessitate the sport industry to further adapt and evolve to respond to ongoing technological changes

The rapid advancement of digital technologies, particularly with the emergence of AI, marks a significant technological shift that is fundamentally reshaping how various brands in the sport industry operate and engage with their consumers. While this technological evolution offers novel marketing strategies that create more

personalized, immersive, and interactive experiences for sport fans, it also presents myriad IP issues, especially concerning trademark rights and brand protection (Grynberg, 2019; Napitupulu et al., 2023). Furthermore, while AI is ubiquitous for society, there is an urgent need to examine how its evolution may affect the sport industry's rightsholders.

Despite these emerging risks, courts have yet to fully address how traditional trademark principles apply in this new landscape, leaving sport organizations vulnerable and uncertain about their legal recourse. Furthermore, current legal doctrine, including traditional trademark law principles, may be insufficient to address evolving scenarios involving sports content, where content generated by AI technologies, often referred to as AI-generated content, may infringe upon registered trademarks. Such infringement likely occurs either by replicating logos or other brand elements, or by producing entirely new content that causes confusion or dilutes brand identity. For example, a fan may use a generative AI tool to create content depicting a professional athlete wearing a jersey with the team's logo, potentially implying false endorsement and infringing both trademark and the athlete's name, image, and likeness (NIL) rights. Similar concerns have arisen in litigation, such as Getty Images' lawsuit against Stability AI in which Getty Images alleges the unauthorized use of protected images and logos, including sport-related content, in the development and output of AI systems (BakerHostetler, n.d.). This case highlights AI's potential to facilitate deceptive or unauthorized use of trademarks at scale.

## Emerging Legal Challenges Posed by AI Algorithms

This study sought to critically examine these emerging legal challenges to determine whether existing trademark law as reflected through the case law can effectively provide comprehensive IP protection in the rapidly evolving digital sport marketplace. AI algorithms, leveraging advanced image and text recognition capabilities, are often trained on preexisting materials available online, including existing trademarks (e.g., Nike's Swoosh logo and the New York Yankees' interlocking NY logo and team color scheme). Such AI systems can replicate these trademarks with remarkable precision, undermining the authenticity and trust that well-known brands rely on to maintain their distinctiveness and market value (O'Connor, 2024).

Additionally, there is a technical concern apart from the legal one for sport organizations, including teams, to guard their IP. Trademark law requires trademark owners to police their marks and guard against unauthorized uses (McCarthy, 2024). This becomes a more complicated task in the AI era, given how rapidly AI can reshape existing trademarks or integrate them into new creations, potentially infringing the owner's existing trademarks. Similarly, unlike traditional forms of content creation, including fan-generated or fan-created content, AI-generated outputs frequently combine elements from various sources with minimal or no human

oversight (Gowran, 2022; O'Connor, 2024), creating legitimate ownership questions about the trademarks used and integrated into these newly created works. However, the mere appearance of a trademark in an AI-generated output does not automatically constitute infringement. As a threshold matter, trademark liability requires that the mark be used in a source-identifying manner, which may not always be the case when AI systems recombine trademarks as part of broader, multi-source outputs (McCarthy, 2024).

The lack of human oversight in AI-generated outputs creates the potential for inadvertent trademark infringement, which could significantly disrupt key revenue streams for brands in the sport industry, including merchandise sales, branding, and sponsorship deals. Whether these outputs are used as standalone products or promotional materials, they may be interpreted as source-identifying uses (i.e., used in a trademark sense), which are threshold determinations in assessing trademark infringement (Murray, 2024). Additionally, unlike traditional computer-generated works, modern AI systems operate with a level of autonomy and independent decision-making that earlier technologies lacked, generating content without the need for continuous human direction. This autonomy further complicates the issue of legal accountability for AI-generated content, particularly in applying likelihood of confusion to access consumer deception regarding the origin of goods. Consequently, it becomes more difficult to determine who bears responsibility for trademark infringement or dilution when the infringement arises from an AI system rather than a human actor (Doshi-Velez et al., 2017)

This situation that AI presents for trademark rights holders, including sports teams, necessitates a critical evaluation of whether such uses may constitute trademark infringement. As AI's capabilities introduce significant risks of unauthorized use and consumer confusion, this ultimately threatens the distinctiveness of well-known marks, such as iconic team crests and mascot designs. In the sport industry, this specifically endangers recognizable assets like official team logos and player likeness, jeopardizing their commercial value. These risks and uncertainties challenge sport organizations to confront these changing circumstances in a legal area in which trademark laws have traditionally provided a "safe" and well-established area for revenue generation, such as through merchandise sales or licensing team marks (Kaniff, 2023). The complexities that AI poses for trademark owners today build on longstanding challenges and issues for trademark enforcement in the sport industry, where trademark owners bear the burden of vigorously protecting and enforcing their marks and where evolving forms of content creation by sports fans have continually tested the boundaries of legal protections.

## Some Early Case Law Involving AI-Generated Works

Some early cases involving AI-generated works provide a legal roadmap of sorts to the challenges seen today and those that might lie ahead. A notable instance involves Disney raising trademark concerns over AI-generated images produced by Microsoft's Bing AI image generator, which is powered by OpenAI's DALL-E technology (Kaburu, 2023). OpenAI provided users with broad rights to commercialize the images they generate, including the right to reprint, sell, and merchandise them (Gowran, 2022). Disney's primary concern centered on whether the AI-generated images of its Pixar logo constitute trademark infringement. However, the situation became more complex with the emergence of the Offensive AI Pixar meme, where users create and share offensive content featuring recognizable logos, often causing reputational harm to the brand (Kaburu, 2023).

As OpenAI's extensive grant of commercialization rights can inadvertently lead to trademark infringement, users may unknowingly generate and commercialize content that includes recognizable sport logos, team color schemes, or slogans, heightening the risk of trademark infringement and dilution. The Disney Pixar case has raised significant questions about legal accountability, particularly regarding whether the responsibility for potential infringement lies with the users creating this content or with the technology developers who facilitate the use of their AI tools.

As AI technologies blur the lines between creation and ownership, sport stakeholders must grapple with potential risks such as unauthorized uses of team logos, mascots, slogan, and even color schemes (e.g., the purple and gold combination representing Louisiana State University) that can be protected under trademark law (*Board of Supervisors for Louisiana State University Agricultural and Mechanical College v. Smack Apparel Co.,* 2008). These visual assets, which fall under trademark protection, are integral to a sport brand's identity and marketability (Jensen & Smith, 2024). This evolving scenario not only threatens the distinctiveness of sport organizations seeking to protect their IP rights but also places users, whether sport fans or third-party creators, in a precarious position, often unaware of the legal ramifications of their actions.

Recognizing that the law often lags behind technological advancements (McKelvey & Grady, 2017), this study highlighted the necessary adaptations in existing trademark frameworks to effectively address the emerging challenges faced by the sport industry, particularly in relation to AI-generated content. Current trademark law focuses on source identification, likelihood of confusion, dilution, and available defenses, yet these concepts are challenging to apply. This is especially true when AI autonomously generates content and obscures who is responsible.

This study was guided by the following three research questions:

1. How have case law precedent and existing trademark doctrines shaped the application of trademark law in response to technological advancements?
2. What trends can be identified in court decisions regarding the balance between innovation in digital content creation and the protection of established trademark rights, particularly in the sport industry?
3. How can courts draw analogies between traditional trademark cases and emerging disputes involving AI-generated content, specifically regarding trademark protections within the sport industry?

## Trademark Infringement

A brief overview of trademark law key concepts and some more recent issues is provided to allow the reader to see the significance of the evolution of these concepts over time through the case law. Generally speaking, a trademark owner holds an exclusive right to prevent unauthorized use that could diminish the distinctiveness and commercial value of their mark in the marketplace. When these rights are violated, it may constitute trademark infringement. To succeed in a trademark infringement claim under the Lanham Act, a plaintiff must demonstrate three key elements: (a) protectable ownership rights in their mark, (b) that the defendant infringed on those rights, and (c) that the defendant's use of their mark is likely to cause consumer confusion with the plaintiff's mark (15 U.S.C. § 1114; 15 U.S.C. § 1125(a)). For registered marks, the Lanham Act requires that the defendant "use in commerce" the mark without the plaintiff's permission "in connection with the sale, offering for sale, distribution or advertising of any goods or services on or in connection with which such use is likely to cause confusion, or to cause mistake, or to deceive" (15 U.S.C. § 1114(1)). On the other hand, for unregistered marks, the Lanham Act requires that defendant's unauthorized "use in commerce" of the mark must be "on or in connection with any goods or services," and that such use is "likely to cause confusion, mistake, or deception" as to the defendant's "affiliation, connection or association with another person, or the "origin, sponsorship, or approval of the defendant's goods, services, or commercial activities by another" (15 U.S.C. § 1125(a)(1)(A)). In both claims, whether for registered or unregistered marks, the plaintiff must prove that the defendant used the mark in commerce in connection with the sale or distribution of goods or services, and such use is "likely to cause consumer confusion." While the specific requirements may vary depending on the case, the element of likelihood of confusion is essential to all trademark infringement claims (*Gruner + Jahr USA Publishing v. Meredith Corp*., 1993).

While the question about likelihood of confusion is to determine whether consumers would be likely to confuse the source of goods or services, this can extend

beyond merely identifying the source of goods. In *Nike, Inc. v. Just Did It Enterprises* (1993), the court emphasized that customer confusion may involve beliefs regarding sponsorship or affiliation with the trademark owner. As a result, the court considered whether consumers purchasing a shirt from JUST DID IT Enterprises would likely assume a connection to NIKE, thereby highlighting that the potential for confusion encompasses broader associations than just the source of the product (*Nike, Inc. v. Just Did It Enterprises,* 1993).

## Trademark Dilution

In addition to providing protection against trademark infringement, the Lanham Act also safeguards famous trademarks from dilution, which is defined as "the lessening of the capacity of a famous mark to uniquely identify and distinguish its goods" (*Well-Known Marks*, 2017, para. 9). Trademark dilution occurs when the unauthorized use of a famous mark either diminishes its distinctiveness, known as blurring (15 U.S.C. § 1125(c)(2)(B)), or damages its reputation, referred to as tarnishment (15 U.S.C. § 1125(c)(2)(C)).

## Contributory Infringement

Generally, contributory infringement is "a form of secondary liability for direct infringement of a patent, copyright, or trademark" (Legal Information Institute, n.d.-b, para. 1). Secondary liability applies when "one who, with knowledge of the infringing activity, induces, or materially contributes to the infringing conduct of another" (*Gershwin Pub. Corp. v. Columbia Artists Man,* 1971, p. 1162). A key aspect of contributory infringement occurs when a defendant provides goods or services that are instrumental in enabling a direct infringer's unlawful activities. However, the Lanham Act primarily addresses direct trademark infringement and does not explicitly address the concept of contributory infringement. While the Act covers trademark infringement related to the reproduction, counterfeiting, or imitation of a registered trademark intended for use in commerce (15 U.S.C. § 1114(1)(b)), it lacks a statutory provision for contributory liability in trademark law (Kaiser, 2002; Oddi, 1989). As commerce has evolved, particularly with the rise of the Internet and e-commerce, courts have recognized the need to adapt trademark law to address these challenges, and the doctrine of contributory infringement has been increasingly applied in this context (*Gucci America, Inc. v. Hall Associates,* 2001; *Lockheed Martin Corp. v. Network Solutions*, 1999). In these cases, plaintiffs asserted causes of action for both contributory and direct trademark infringement, leading courts to hold that an Internet service provider (ISP) can be liable for trademark infringement if it knowingly facilitates infringing activities. Thus, courts have recognized a cause of action for contributory trademark infringement as a common law principle derived from the need to protect trademark rights.

In the AI era, where technologies are capable of generating content that infringes or dilutes protected trademarks, sport organizations face unprecedented threats to brand identity, consumer trust, and financial stability (Najjar, 2023). Thus, there is now the need to reevaluate trademark protections and strategically incorporate legal safeguards into sport management decision-making processes. By bridging the gap between trademark law and sport brand management, the study provides actionable insights for practitioners tasked with navigating the complexities of AI-driven environments. Specifically, this research examines how courts are drawing on established trademark principles and analogies to adjudicate AI-related disputes. It uncovers emerging litigation trends and proposes legal strategies that align with the unique needs of brands in the sport industry.

# Review of Literature

## Trademarks and Brand Protection

Trademark law provides the legal foundation for brand protection by teams, organizations, and athletes in protecting their IP. Traditional IP principles provide sport organizations with a reliable way to protect their brand from infringement, including digital infringement such as Internet piracy, counterfeiting, and potential infringement through user-generated content. Now, a new challenge to trademark owners is posed by unauthorized uses of registered trademarks in the context of AI or enabled by AI. Traditional trademark law principles are having difficulty keeping pace with the rapid technological evolution that AI has spurred. This requires new brand protection strategies and necessitates employing novel interpretations of trademark law to provide adequate protection for sport brands' trademarks and other marks used by the sport industry to distinguish their brand from those of rivals.

As is well established, trademarks consist of "any words, name, symbol, or device, or any combination" (15 U.S.C. § 1127) and are largely used in business as a signifier of the source of goods and services in a marketplace (*United States PTO v. Booking.com B. V.,* 2020). In the context of sport industry, trademarks serve as a critical tool for safeguarding a sport organization's brand, including names, logos, and other distinguishing symbols (Grady, 2023; Grady & McKelvey, 2008). This function underscores the close relationship between trademarks and brands, as a brand is defined as "any distinctive feature like a name, term, design, or symbol that identifies goods or services" (American Marketing Association, n.d., para 1), indicating a significant overlap in the definitions and functions of trademarks and brands. Modern trademark protection has been justified to protect business goodwill, preventing competitors from unfairly appropriating an owner's reputation by misleading consumers into believing that their goods are those of the rightful owner.

## Challenges to Traditional Trademark Law in the Internet Era

Since the passage of the Lanham Act in 1946, trademark law in the United States has evolved significantly to accommodate the complexities of modern commerce. Despite rapid and significant technological advancements, traditional trademark law remains rooted in principles developed during the era of brick-and-mortar commerce (Johnson, 2014; Yan, 2000). With the advent of digital technologies and e-commerce, the trademark landscape has undergone further transformation, raising questions about how traditional legal frameworks can adapt to these new challenges. Legal cases focused on challenging domain names, e-commerce, and global market expansion serve to highlight the gaps in the law and the ongoing efforts of courts and lawmakers to adapt established trademark principles to the digital age.

One specific challenge introduced by the Internet is the issue of geographic boundaries in trademark rights. Traditionally, common law trademark rights developed within the physical marketplace, where a seller's trademark was identified with its products through direct consumer interaction at brick-and-mortar locations (*Goto.com, Inc. v. Walt Disney Co.*, 2000). These physical points of sale served as the basis for assessing consumer recognition and brand association. However, online businesses through the Internet lack this physical presence, making it more difficult to define where their trademarks hold recognition (Creasman, 2005).

Additionally, there are challenges to existing legal doctrines posed by the context of the Internet. While traditional trademark law doctrines were originally designed for "brick-and-mortar" marketplaces, the rise of the Internet has allowed brands to reach customers nationwide or even globally, often without a physical presence. This shift has raised questions that have made it challenging for courts to reconcile existing doctrines with the realities of online commerce (Johnson, 2014). Early case law recognized that the Internet's global reach and instantaneous nature could satisfy the "use in commerce" requirement, given that Internet communications are accessible worldwide (*Planned Parenthood Federation of America, Inc. v. Bucci*, 1997). Given the broad reach of the Internet, courts have been cautious about allowing any one party to monopolize online use of a trademark, especially when multiple parties have established concurrent rights within different geographic areas (Johnson, 2014). Courts have also encountered challenges in determining the territorial scope of trademark protection on the Internet. In some cases, jurisdictions have acknowledged the possibility of creating a separate sui generis zone of protection for online trademarks, distinct from traditional zones of goodwill and natural expansion (Johnson, 2014).

Given that the Internet, as a global communication medium, lacks clear territorial boundaries, it remained difficult to define whether trademark rights in the digital age should extend nationwide, remain exclusive to the online space, or require a new

approach altogether (Johnson, 2014). These early rulings underscore the persistent challenges courts face in balancing Internet accessibility with territorial trademark rights.

There have also been trademark challenges involving social media. This case law has helped shape the current legal environment. As trademark challenges evolve with technological developments, the rise of social media introduced additional complexities distinct from those seen in broader Internet contexts. In the context of social media, use by sport brands and users (consumers) engaging with these brands online creates novel legal issues. For example, including user-generated content such as that posted on X (formerly Twitter), the hashtag emerged as a key tool on social media, first introduced on Twitter in 2007 to help organize discussions and connect users with shared interests. Sport management scholars including McKelvey and Grady (2017) analyzed the potential trademark issues associated with hashtag use, including the use of Olympic-related hashtags as conversation starters for Olympic fans to post about their favorite teams (and brands) during the Games.

## Trademark Challenges in the Era of AI

As one of today's disruptive technologies, AI is transforming all aspects of society, including the legal landscape. This innovative technology is increasingly replacing humans in performing automated cognitive tasks, a phenomenon often referred to as "transhumanism" (Revalla, 2018). While AI is now becoming a part of everyday life, its speculative origins can be traced back to 1942, when American science fiction writer Isaac Asimov published *Runaround*, inspiring generations of scientists, including Marvin Minsky, who later co-founded the MIT AI Laboratory (Haenlein and Kaplan, 2019). In 1956, the term "Artificial Intelligence" was officially coined through the Dartmouth Summer Research Project led by Minsky and John McCarthy, now considered founding figures in AI. Although AI was established as an academic discipline in the 1950s, it remained relatively obscure and of limited practical interest for more than half a century (Haenlein & Kaplan, 2019).

Trademark challenges in web-based search algorithms have long been a point of contention, even before the advent of today's advanced AI systems. Early disputes centered on how keyword-based search technologies could misappropriate trademarks, creating confusion among consumers and raising questions of liability for platforms. Cases like *Cosmetic Warriors v. Amazon.co.uk* (2014) and *Multi Time Machine, Inc. v. Amazon.com., Inc.* (2015) illustrate the evolution of these issues in the context of increasingly sophisticated AI-driven systems.

Revalla (2018) emphasizes the increasing risks of trademark infringement posed by AI systems and search algorithms, as platforms like Amazon use AI to suggest competing or unrelated products based on search terms. As AI continues to evolve, such disputes are likely to rise, especially as the traditional concepts of the "average

consumer" and "likelihood of confusion" become more difficult to apply with the autonomous decision-making of AI systems (Revalla, 2018). Revalla (2018) argued that technological advancements are challenging traditional trademark law principles, pushing courts to adapt and introduce new interpretations. Traditionally, these interpretations have been based on the human consumer, but with AI's growing influence, courts may need to consider the "artificial consumer" and assess how AI algorithms shape consumer behavior (Revalla, 2018). This shift could lead to a redefinition of key trademark law principles to address the evolving role of AI in commerce and IP disputes.

With AI systems analyzing vast amounts of consumer data, search algorithms now provide tailored results based on user behavior and preferences (Argan et al., 2022). While these systems are designed to enhance the user experience, they may also inadvertently increase the risk of confusion when trademarks are used to guide search results or suggest related products. The ability of AI to generate product suggestions based on patterns in data could lead to situations where consumers are exposed to competing products or brands that may cause initial interest confusion (Kosinski, 2023).

AI technologies and algorithms also play an increasingly significant role in content creation across various areas and for multiple purposes. Particularly, generative AI technologies are extensively used to create new content, such as customized images and videos. For example, marketers leverage generative AI to produce personalized messages, images, and videos by learning from vast datasets (Kshetri et al., 2024). However, these AI systems are often trained on existing online materials, including registered trademarks, which raises the risk of unintentional trademark infringement (O'Connor, 2024).

The emergence of AI technologies and algorithms has brought new challenges to trademark law, particularly when AI-generated content mimics or incorporates trademarks in ways that blur the line between creative expression and misappropriation. While parody traditionally provides a defense to trademark infringement, how this defense applies in the context of AI-generated content remains unclear and requires further examination. These challenges are evident when generative AI tools unintentionally produce content that closely resembles protected trademarks (Murray, 2024). For instance, Disney raised concerns over Microsoft's Bing image-generation tool, which recreated the Disney Pixar logo, illustrating the potential for misuse and the reputational harm that can arise from offensive AI-generated parodies (Kaburu, 2023). Such cases highlight the growing risks to iconic trademarks when generative AI platforms inadvertently or intentionally replicate them. This phenomenon underscores the difficulty in distinguishing permissible parody from unauthorized trademark use in AI-generated content.

The ongoing *Nike, Inc. v. StockX LLC* (2024) case raises concerns about trademark protections for digital assets associated with sport organizations. In this case,

Nike sued StockX, a resale platform for sneakers, apparel, and other collectible goods, for allegedly using Nike's trademarks without authorization in the sale of non-fungible tokens (NFTs). These NFTs were tied to Nike sneakers, and Nike argued that their use created confusion among consumers about the authenticity and affiliation of the products. This case highlights the growing challenges that brands in the sport industry face in protecting their IP as digital technologies and marketplaces evolve. For brands like Nike, whose value depends heavily on brand reputation and consumer trust, unauthorized digital uses of trademarks, especially in emerging ecosystems like NFTs, pose a serious threat to brand integrity (Kim et al., 2025).

There are additional legal concerns about how AI-generated content introduces additional complexity to these traditional legal principles. Unlike traditional creators, AI systems often combine elements from vast datasets, potentially incorporating trademarks without intent or awareness of the legal ramifications (Gowran, 2022; O'Connor, 2024). For instance, generative AI may produce imagery that closely resembles well-known trademarks under the guise of parody, yet the distinction between expressive and source-identifying use remains crucial. As highlighted in *Jack Daniel's Properties, Inc. v. VIP Products LLC* (2023), in which the Supreme Court ruled against a dog toy mimicking a whiskey bottle design, the parody defense does not shield a defendant when a trademark is used as a source identifier to designate the origin of goods. This decision establishes that expressive works cannot escape liability if they function as a product's identifier or dilute the distinctiveness of a trademark. This precedent is critical in evaluating AI-generated parodies that borrow from established trademarks, particularly when the content is used commercially or confuses consumers about the origin or sponsorship of the work (Murray, 2024).

The role of AI in e-commerce platforms also introduces significant complexities for trademark law, particularly concerning contributory infringement. While much of the existing research emphasizes brand management and search algorithms, limited attention has been given to how AI-driven platforms may facilitate or fail to prevent trademark infringement (Lim, 2022). Platforms like Amazon leverage AI to track consumer behavior, delivering personalized recommendations and targeted advertisements. For consumers, this translates into tailored search suggestions based on past purchases and preferences (Gao et al., 2023; Lim, 2022). For brand owners, however, engaging with these platforms requires adapting to the algorithms that act as "digital butlers," guiding consumers toward products influenced by their browsing histories and purchasing habits (Lim, 2022).

The analogy to metatag cases further illustrates the potential liability of AI platforms (Lim, 2022). Metatags are pieces of website metadata that consist of text embedded in a site's code. Although they remain invisible to users, they function to influence search engine rankings and guide algorithms in categorizing digital content. Courts have found trademark infringement in cases where metatags misled

search engines to direct consumers to unrelated products, provided there was evidence of consumer confusion or illegitimate intent (*Jim S. Adler, P.C. v. McNeil Consultants, L.L.C.*, 2021).

## Method

This study employed a doctrinal research approach to analyze trademark disputes arising from technological advancements. Doctrinal research systematically examines legal principles, case law, and statutes to understand how the law is applied and evolves in a particular area (Hutchinson & Duncan, 2012; McConville & Chui, 2017). This methodology is particularly useful for tracing past legal developments, particularly in contexts where technological innovation has challenged established legal principles (McConville & Chui, 2017). To address the evolving nature of AI-related legal disputes, the study also incorporated an analysis of filings and pleadings from ongoing cases that are still pending. These documents revealed the key arguments and strategies of the parties, offering a real-time perspective on emerging issues and illustrating how courts are beginning to navigate trademark disputes in the context of AI.

This study applied the systematic steps for identifying, evaluating, and synthesizing legal sources outlined by McConville and Chui (2017), following five key stages: (1) selecting precise research questions, (2) identifying appropriate legal databases, (3) determining effective search terms, (4) applying screening criteria, and (5) critically synthesizing the findings.

First, research questions were formulated to investigate how courts address AI-related trademark disputes. Although no sport-related trademark cases were found during the initial case law search, leading cases from various other industries were analyzed to identify broader legal trends applicable to the sport sector. Specifically, the study sought to answer:

1. How have case law precedent and existing trademark doctrines shaped the application of trademark law in response to technological advancements?
2. What trends can be identified in court decisions regarding the balance between innovation in digital content creation and the protection of established trademark rights, particularly in the sport industry?
3. How can courts draw analogies between traditional trademark cases and emerging disputes involving AI-generated content, specifically regarding trademark protections within the sport industry?

Second, appropriate legal databases were identified to support the research. Leading case law was sourced from Nexis Uni, a version of LexisNexis available to universities (McConville & Chui, 2017).

Third, a structured search strategy was developed to identify relevant case law, specifically targeting four search categories: (1) trademark disputes involving web-based search algorithms, (2) AI-generated content, (3) AI-generated content with contributory infringement issues, and (4) analogies from other areas of IP law, including copyright and the right of publicity. For each area, specific keywords and Boolean connectors (e.g., AND, quotation marks, wildcard) were employed to ensure the search captured cases explicitly linking AI and trademark issues, such as "trademark infringement" AND "search algorithm" for web-based search algorithm cases, and "trademark infringement" AND "AI-generated content" for AI-related disputes.

In addition to case law, supplementary searches of publicly available sources were conducted via the Google search engine. These searches, which included industry reports and news articles, were conducted to examine how sport brands respond to AI-driven challenges. These searches highlighted ongoing disputes, potential trademark issues, and related legal considerations.

Fourth, screening criteria were applied to ensure that only relevant and authoritative sources were included. Practical criteria prioritized jurisdiction (e.g., U.S. cases), recency (e.g., post-2000 decisions), and relevance to technological advancements in trademark law, while methodological criteria emphasized well-reasoned judicial opinions, landmark decisions, and cases with implications for the sport industry. The validity of primary authorities was confirmed using Nexis Uni's Shepard's Citations to ensure all cases remained "good law" (Osborne, 2023). Building on these criteria, each case was then systematically evaluated to ensure relevance, authority, and analytical value.

Cases were assessed in a five-step process. First, cases were evaluated for relevance to the research questions, focusing on four search categories: (1) web-based search algorithms, (2) AI-generated content, (3) AI-generated content with contributory infringement, and (4) analogous IP issues. At this stage, 87 of 112 initial cases were excluded at this stage. Second, duplicates were removed. Among the 25 cases remaining after the relevance assessment, three unique cases appeared multiple times, resulting in eight duplicate entries that were subsequently excluded. Third, jurisdictional and court-level filters were applied to prioritize federal decisions, ensuring greater precedential weight and consistent treatment of AI-related trademark issues across jurisdictions. Fourth, judicial treatment was assessed using Nexis Uni's Shepard's Citations, and no cases among the 17 remaining were excluded. Finally, the cases were categorized according to the four search categories, enabling systematic comparison and analysis across jurisdictions and AI-related trademark issues.

Fifth, findings were synthesized through a comprehensive analysis of case law and secondary sources. Unlike the supplementary search for industry examples, which utilized Google searches for news and industry reports, this synthesis stage employed Google Scholar and legal databases like Nexis Uni and HeinOnline to

locate scholarly articles and professional legal analyses. Specific search terms for this phase included "trademark law and AI," "consumer confusion in AI-generated content," "trademark dilution and digital technologies," and the like. The analysis focused on extracting courts' reasoning (ratio decidendi), identifying key legal principles, and tracing emerging trends in trademark law related to AI and technological advancements, with particular attention to implications for the sport industry. Secondary sources provided context on how brands navigate AI-driven challenges in practice. To capture broader legal patterns, the study examined disputes involving brands across multiple industries, recognizing that AI's impact on trademark law extends beyond any single sector. This approach enabled a clear understanding of how courts and companies are addressing novel AI-related trademark issues, offering a robust framework for evaluating the evolving intersection of technology and trademark law in the sport industry.

# Results

Cases were retrieved, reviewed, and filtered across the four search categories to ensure a focused and relevant dataset for analysis (see Table 1). Seventeen cases were identified for this study, and each case is marked under the relevant categories (e.g., #1) where it applies, showing overlap between the categories when applicable. This organization allowed for an efficient analysis of how courts have addressed AI-related disputes across various IP contexts, including trademark, with the cases serving as a foundation for the deeper legal analysis that follows.

## Search 1: Leading Trademark Cases for Web-Based Search Algorithms

Search 1 reviews six landmark U.S. trademark cases addressing the application of the Lanham Act to web-based search algorithms, keyword advertising, and metadata use. These cases illustrate how courts have navigated the evolving boundary between traditional trademark protections and digital marketing technologies.

***Site Pro-1, Inc. v. Better Metal, LLC (2007).*** In the telecommunications hardware sector, Site Pro-1 alleged that a competitor's use of its trademark in website metadata and search keywords diverted traffic. The court dismissed the claim, ruling that internal or non-visible uses of trademarks without indicating product source do not constitute "use in commerce" under the Lanham Act.

***FragranceNet.com, Inc. v. FragranceX.com, Inc. (2007).*** FragranceNet.com, an online retailer of fragrances, claimed that FragranceX.com used its trademark in metatags and keyword advertising to trigger search results. The court rejected the claims, citing 1-800 Contacts, Inc. v. WhenU.com, Inc (2005), which established that internal algorithmic uses alone do not amount to trademark "use."

**Table 1. Cases by Search Category**

| Case Name | # 1 | # 2 | # 3 | # 4 |
|---|---|---|---|---|
| Site Pro-1, Inc. v. Better Metal, LLC (2007) | V | | | |
| FragranceNet.com, Inc. v. FragranceX.com, Inc. (2007) | V | | | |
| Rescuecom Corp. v. Google, Inc. (2009) | V | | | |
| 1-800 Contacts, Inc. v. Lens.Com, Inc. (2013) | V | | | |
| Xcentric Ventures, LLC v. Mediolex Ltd. (2014) | V | | | |
| Multi Time Mach., Inc. v. Amazon.com, Inc. (2015) | V | | | |
| Williams-Sonoma, Inc. v. Amazon.com, Inc. (2019) | | V | | |
| Overjet, Inc. v. VideaHealth, Inc. (2024) | | V | | V |
| KAWS, Inc. v. Printify Inc. (2024) | | | V | |
| UAB "Planner5D" v. Facebook, Inc. (2019) | | | | V |
| Thomson Reuters Enter. Ctr. GmbH v. ROSS Intelligence Inc. (2021) | | | | V |
| In re Clearview AI, Inc., Consumer Priv. Litig. (2022) | | | | V |
| Tremblay v. OpenAI, Inc. (2024) | | | | V |
| N.Y. Times Co. v. Microsoft Corp. (2024) | | | | V |
| Andersen v. Stability AI Ltd. (2024) | | | | V |
| Kohls v. Bonta (2024) | | | | V |
| Kadrey v. Meta Platforms, Inc. (2024) | | | | V |

***Rescuecom Corp. v. Google, Inc. (2009).*** Rescuecom, a national computer services franchisor, sued Google for allowing competitors to bid on its trademark through AdWords and for recommending the purchase of its mark via the Keyword Suggestion Tool. The Second Circuit distinguished the case from *1-800 Contacts*, on which the district court had relied, and held that actively selling trademarks as keywords rather than merely using them internally constitutes "use in commerce," allowing the case to proceed.

***1-800 Contacts, Inc. v. Lens.Com, Inc. (2013).*** 1-800 Contacts alleged that Lens.com, a competing retailer, used its trademark in AdWords, giving rise to both direct and secondary liability. The court held that hidden or indirect uses alone do not establish

consumer confusion but recognized potential contributory infringement, as Lens.com may have knowingly allowed affiliates to misuse the mark without adequate corrective action.

***Xcentric Ventures, LLC v. Mediolex Ltd (2014).*** Xcentric Ventures, owner of Ripoff Report, accused Complaintsboard.com of trademark infringement for using its marks in website content and metatags. The court rejected the claim, finding no actionable "use in commerce" or evidence of consumer confusion, and emphasized that the mere algorithmic presence of marks is insufficient to establish liability.

***Multi Time Machine, Inc. v. Amazon.com., Inc. (2015).*** Multi Time Machine argued that Amazon's search results for its "MTM Special Ops" watches created consumer confusion by displaying competitor products. The Ninth Circuit rejected the claim, reasoning that clear labeling of product names, images, and manufacturers mitigated confusion, underscoring the importance of consumer perception in algorithm-driven marketplaces.

***Analysis for Search 1***

These cases demonstrate how courts have applied traditional trademark principles to disputes involving algorithm-driven advertising and metadata-based uses of trademarks. They reveal an evolving judicial approach: while purely internal or non-visible uses often fall outside the Lanham Act's definition of "use in commerce," active monetization of trademarks in keyword advertising may satisfy that threshold. Furthermore, courts place significant weight on whether algorithmic outputs actually cause consumer confusion, with clear labeling and transparent presentation serving as mitigating factors. Given that AI technologies similarly function through algorithmic decision-making, these precedents provide critical insight into the trademark implications of AI-generated content, automated endorsements, and personalized marketing in sectors such as sport branding.

Additionally, courts addressed contributory liability in algorithm-driven trademark disputes. While internal or incidental uses of trademarks generally do not give rise to direct infringement, as in FragranceNet.com and *Xcentric* the court in *1-800 Contacts v. Lens.com* (2013) recognized that contributory infringement may arise when a company knowingly allows affiliates or partners to misuse a mark without taking adequate corrective action. This reasoning indicates that in future AI-driven contexts, liability may hinge less on whether the use is automated and more on the extent of oversight exercised by the party benefiting from the system.

## Search 2: Leading Trademark Cases for AI-Generated Content

Search 2 reviews two recent cases that address trademark infringement, false association, and false advertising in AI-driven marketing and product design.

***Williams-Sonoma, Inc. v. Amazon.com, Inc. (2019).*** Williams-Sonoma, a high-end retailer of home furnishings and related homewares, sued Amazon, alleging that its use of "Shop Williams-Sonoma" pages, targeted ads, and promotional emails misled consumers into believing an official affiliation existed. The court denied Amazon's motion to dismiss, holding that the allegations plausibly supported claims of trademark infringement and false association. The case was later settled.

***Overjet, Inc. v. VideaHealth, Inc. (2024).*** Overjet, a dental AI company, sued Videa–Health, a competitor company, for copyright infringement, unfair competition, and false advertising under the Lanham Act claiming its rival copied AI-generated annotation designs and made misleading product claims. The court denied Overjet's motion for a preliminary injunction, finding the designs functional and unprotectable and concluding that Overjet had not shown a likelihood of consumer deception or irreparable harm.

***Analysis for Search 2***

These cases reflect how courts are adapting trademark principles to AI-generated content and automated marketing systems. In *Williams-Sonoma*, the court recognized that AI-assisted marketing and website design can create misleading impressions of affiliation, exposing platforms to liability when automated branding suggests partnerships that do not exist. In contrast, *Overjet* illustrates the limits of protecting AI-generated brand elements, as the court found that the color schemes and shape designs used for dental AI annotations were primarily functional and insufficiently original for copyright protection. While the case centered on copyright, it has implications for trademark law, highlighting that AI-generated logos, designs, or other brand elements must serve a distinctive source-identifying function to qualify for legal protection. The court also noted that *Overjet* failed to demonstrate consumer deception in its false advertising claim, emphasizing that proving misleading AI-generated marketing requires concrete evidence under the Lanham Act.

## Search 3: Leading Trademark Cases for AI-Generated Content and Contributory Infringement Issue

Search 3 examines a recent case in the print-on-demand and creative content industry, highlighting how courts assess platform liability when AI-assisted tools enable third-party users to create and sell potentially infringing products.

***KAWS, Inc. v. Printify Inc. (2024).*** KAWS sued Printify, alleging that its print-on-demand platform facilitated the sale of counterfeit and infringing products by allowing merchants to upload designs or use AI-generated artwork incorporating KAWS's trademarks. The court denied the preliminary injunction, holding that Printify acted as a passive marketplace, did not directly use the trademarks, and had not knowingly contributed to infringement.

***Analysis for Search 3***

The central issue in *KAWS* is whether a platform providing AI-assisted design tools constitutes a passive intermediary or an active participant in infringing activity. The court distinguished Printify from platforms previously found liable, such as Redbubble or SunFrog, emphasizing that Printify neither branded shipments, controlled product listings, nor promoted infringing goods as its own. This ruling highlights that the decisive factor in platform liability is the level of control and active participation in marketing or sale of potentially infringing products.

As AI-generated design tools become increasingly integrated into e-commerce platforms, courts are likely to continue evaluating liability based on whether a platform merely provides automated tools or actively curates, brands, and profits from infringing content. The *KAWS* decision suggests that platforms that limit themselves to providing automated design and print infrastructure, without exerting control over merchant listings or branding, are less likely to be held directly or contributorily liable, although future developments may reassess this balance as AI-generated content proliferates.

## Search 4: Analogy from Other IP Cases

Search 4 examines IP cases beyond trademark law, including copyright and right of publicity disputes, to identify reasoning applicable to AI-related trademark issues. The cases span industries such as generative AI, media, legal tech, biometric data, and publishing, highlighting unauthorized use of protected works or likenesses and the application of fair use principles.

***UAB "Planner5D" v. Facebook, Inc. (2019).*** Planner5D, a Lithuanian company providing a virtual home design tool, alleged copyright and trade secret misappropriation related to its 3D object data used by Facebook and Princeton. The court dismissed the claims, finding the plaintiff failed to adequately plead originality and secrecy.

***Thomson Reuters Enter. Ctr. GmbH v. ROSS Intelligence Inc. (2021).*** Thomson Reuters, a legal research and publishing company that owns Westlaw, claimed ROSS unlawfully copied Westlaw content to train AI. The court allowed copyright and tortious interference claims to proceed, ruling that unauthorized commercial use of proprietary content was not fair use.

***In re Clearview AI, Inc., Consumer Priv. Litig. (2022).*** Plaintiffs alleged Clearview scraped facial images and used them commercially without consent, violating the Illinois Biometric Information Privacy Act (BIPA) and right of publicity laws. The court allowed claims to proceed, holding that unauthorized commercial use of individuals' likenesses is actionable even if sourced from publicly available information.

***Tremblay v. OpenAI, Inc. (2024).*** A group of authors sued OpenAI for using copyrighted books to train AI. The court allowed direct copyright infringement claims to proceed but dismissed other claims for lack of evidence of substantial similarity or removal of copyright information.

***N.Y. Times Co. v. Microsoft Corp. (2024).*** *The New York Times* alleged Microsoft and OpenAI used its content to train AI models. The court rejected discovery requests about the New York Times' own AI practices, emphasizing that copyright analysis focuses on the alleged infringer's use, not the plaintiff's internal practices.

***Andersen v. Stability AI Ltd. (2024).*** A group of artists claimed their works were used without permission to train AI, and that the defendants caused false endorsement under the Lanham Act. The court allowed direct copyright and Lanham Act claims to proceed but dismissed certain claims, such as the Digital Millennium Copyright Act and unjust enrichment.

***Kohls v. Bonta (2024).*** A content creator challenged California's regulation of AI-generated election content. The court granted a preliminary injunction, holding that the law was overbroad and violated the First Amendment.

***Kadrey v. Meta Platforms, Inc. (2024).*** A group of authors alleged Meta used copyrighted books to train Llama models. The court required Meta to provide full disclosure about dataset use, rejecting the defense that deposit copies alone excused unauthorized use.

## Analysis for Search 4

The cases reviewed in Search 4, spanning copyright and right of publicity related to AI, provide valuable analogies for trademark issues involving AI-generated content. While not directly addressing trademarks, these rulings illustrate key principles: unauthorized commercial use can harm the market value or distinctiveness of protected works, and courts scrutinize whether such use misleads consumers. Cases like *Thomson Reuters, N.Y. Times, Tremblay*, and *Kadrey* show that using copyrighted content to train AI models without permission can constitute infringement, particularly when the outputs replicate distinctive elements commercially. By analogy, AI-generated content that incorporates trademarks, logos, or athlete endorsements may similarly risk consumer confusion or dilution of brand value.

Analogies from the right of publicity case law, exemplified by *Clearview*, further inform trademark law analysis. Unauthorized commercial use of personal likenesses parallels unauthorized use of trademarks or athlete NIL, where harm is assessed in terms of confusion or dilution. Courts generally reject defenses based on expressive or public-interest claims if the primary purpose is commercial exploitation. Therefore, these cases emphasize that AI raises complex IP challenges, requiring careful

assessment of liability, consumer impact, and the balance between innovation and protection of existing rights, particularly in industries like sports where branding and identity have substantial commercial value.

### Additional Industry Examples: AI and Trademark Issues in Sport

Beyond case law, the sport industry provides practical illustrations of AI's impact on trademark and IP issues. For example, Paris Saint-Germain launched a fully AI-generated campaign for its 2024–25 kit, Manchester City incorporated AI into fan-designed jersey concepts, and the NFL's "My Cause, My Cleats" program allowed players and fans to generate custom cleat designs using AI (Ned, 2024). These initiatives enhance creativity and personalization but raise legal and ethical concerns regarding athlete likenesses, unauthorized use of logos, and potential misrepresentation of brand identity. High-profile instances, including Google's AI-generated Super Bowl commercials (Zilber, 2025) and Donald Trump's AI-generated image wearing an NFL uniform (Mehrara, 2024), further demonstrate the risks of misleading or unauthorized depictions that could imply endorsement or affiliation. AI-generated content involving athletes, such as Patrick Mahomes' deepfake promoting a betting campaign (Hindy, 2025) or Tom Brady's AI-generated comedy performance (Growcoot, 2023), highlights the intersection of NIL rights and trademark protections, where commercial use of likenesses can create confusion and potential infringement.

AI's influence extends to sport journalism and media, where automated content creation, fake news, and disinformation campaigns, such as Russia's AI-generated misinformation during the 2024 Paris Olympics, pose challenges for trademark protection, brand integrity, and consumer trust (Watts, 2024). In response, regulatory and institutional measures have emerged; for example, the IOC's 2024 social media guidelines restrict AI-generated content to protect Olympic trademarks and official sponsorships (IOC, 2024). Such examples show that as AI becomes integral to sport marketing and media, organizations must navigate a complex legal landscape balancing innovation, athlete rights, brand identity, and trademark enforcement. This context reinforces the relevance of prior case law in anticipating potential liabilities and guiding responsible AI adoption in the sport industry.

## Discussion and Conclusion

The purpose of this study was to explore how trademark law responds to the growing influence of AI technologies, particularly within the sport industry. With AI increasingly involved in content creation, branding, merchandising, and fan engagement in the sport industry, traditional trademark doctrines such as use in commerce, source identification, and consumer confusion face novel challenges. The study focused on three research questions: (1) how have courts adapted trademark principles to technological change? (2) what legal trends can be identified balancing

digital innovation with trademark protection? and (3) how can courts draw analogies between traditional trademark law and AI-driven disputes involving athlete NIL and sport branding? Using a case analysis approach, the study examined judicial reasoning and doctrinal adaptations, highlighting implications for both legal practice and sports management.

## How Courts Adapt Trademark Principles to Technological Change

The first research question of this study was designed to examine how case law precedents and existing trademark doctrines have shaped the application of trademark law in response to technological advancements. The analysis of Search 1 provides the basis for answering this question. Trademark law has traditionally centered on distinctiveness, source identification, and the prevention of consumer confusion. Yet the rise of algorithmic and AI-driven technologies challenges these principles, particularly as commerce shifts from physical to digital environments. Courts have progressively adapted doctrines to account for new forms of trademark use that were never contemplated under the Lanham Act.

A key development is the expanding interpretation of "use in commerce." Early rulings required direct, consumer-facing use of marks, rejecting claims based on hidden processes such as metatags or backend algorithmic functions (e.g., *Site Pro-1 v. Better Metal*, 2007; *FragranceNet v. FragranceX*, 2007). The landmark decision in *Rescuecom v. Google* (2009) broadened this standard, holding that keyword advertising could constitute commercial use even when marks were not visible to consumers. Subsequent cases, including *Multi Time Machine v. Amazon* (2015) and *Xcentric Ventures v. Mediolex* (2014), emphasized that context, labeling, and platform design critically shape consumer perceptions and influence the likelihood of confusion.

This evolution is particularly salient for AI in sport contexts, where algorithmic systems do not merely present existing trademarks but actively generate, target, and rank content. Such processes can amplify unintended associations between teams, athletes, or brands, potentially creating synthetic outputs that imply sponsorship or endorsement without explicit intent. Courts are therefore beginning to consider not only the content of brand representations but also the structural and algorithmic mechanisms underlying their presentation.

Doctrines governing likelihood of confusion have also been recalibrated in light of digital commerce. While the standard has long been rooted in preventing consumer misperceptions about source, affiliation, or sponsorship, its application has become increasingly complex in environments where algorithms mediate how trademarks are displayed and consumed. In cases such as *Rescuecom v. Google* (2009) and *1-800 Contacts v. Lens.com* (2013), keyword advertising was recognized as potentially misleading, while *Multi Time Machine v. Amazon* (2015) and *Xcentric*

*Ventures v. Mediolex* (2014) emphasized that labeling, context, and platform design strongly influence consumer perception. These decisions show that courts increasingly consider not only content but also the structural and design choices of platforms when assessing consumer confusion.

This evolution in legal jurisprudence is particularly relevant to AI. Algorithmic systems do not simply display existing marks but actively generate, rank, and target content based on user data. These processes may amplify associations between brands and unrelated products or even produce synthetic outputs that mimic brand identifiers without explicit human intent. Such dynamics raise novel risks of confusion by creating implied affiliations or endorsements in ways that consumers may not recognize as algorithmically constructed. As AI becomes more embedded in advertising, merchandising, and fan engagement, courts will need to refine the confusion analysis to account for both visible brand use and the opaque, data-driven mechanisms that determine how trademarks are presented in digital environments.

Well-established doctrines about liability for trademark infringement are also evolving to address AI-mediated trademark use. Although internal algorithmic processes or metadata alone may not automatically give rise to liability, courts have recognized the possibility of contributory infringement when platforms or intermediaries knowingly facilitate or fail to prevent misuse (*1-800 Contacts v. Lens.com,* 2013). This development reflects a broader judicial shift toward evaluating oversight, control, and risk management. Consequently, future AI-related trademark disputes are likely to focus on whether platforms, brands, or technology providers exercised sufficient preventive measures. In the sport industry, where organizations increasingly employ AI for marketing, sponsorship, and fan engagement, legal scrutiny is expected to center on the extent to which responsible actors anticipated potential misuse and implemented appropriate safeguards.

## Legal Trends Balancing Digital Innovation with Trademark Protection

The legal landscape at the intersection of trademark law and digital innovation has evolved from early Internet-era disputes to contemporary challenges posed by AI-generated content. Initial judicial attention focused on domain names and territorial concerns (*Brookfield Communications, Inc. v. West Coast Entertainment Corp.,* 1999; *Panavision International, L.P. v. Toeppen,* 1998). As digital platforms matured, the focus shifted toward algorithm-driven ecosystems. Courts began scrutinizing how search engines, keyword advertising, and digital interfaces shape consumer perceptions. *Multi Time Machine v. Amazon* (2015) exemplifies this transition, with the court examining how algorithmic presentation could influence confusion, while ultimately siding with the platform due to lack of overt consumer deception. More recent rulings, such as *Williams-Sonoma v. Amazon* (2019), emphasize platform

responsibility for content curation and promotion, signaling that intermediaries cannot evade liability merely by delegating actions to automated systems. These cases illustrate a clear trend: courts increasingly balance protection of established trademarks with the need to accommodate technological innovation, particularly in dynamic, data-driven environments.

The rise of AI-generated content introduces a new layer of complexity. Platforms offering AI-powered creative tools raise questions about whether they act as passive intermediaries or active participants in potential infringement. *KAWS v. Printify* (2024) demonstrates that AI integration alone does not trigger liability; courts assess the degree of platform involvement in the creation, promotion, or sale of infringing content. This reflects a cautious judicial approach; while liability is not automatically imposed due to technological advancement, courts remain attentive to the commercial and curatorial role of platforms in digital ecosystems.

In the context of the sport industry, where AI is increasingly used for marketing, fan engagement, and content personalization, these trends have significant implications. Sport brands must consider not only whether AI-generated outputs inadvertently use trademarks but also how platform design, content curation, and monetization strategies may influence legal exposure. As illustrated by the earlier examples of Amazon Web Services' collaboration with the NFL on AI-powered fan-designed cleats, collaborations involving AI-generated fan merchandise or interactive content may create liability risks if oversight is insufficient or if output implies false endorsement. The evolving jurisprudence signals that courts will likely evaluate actual involvement and risk management rather than attributing automatic liability to technological systems. Consequently, sport brands must integrate robust monitoring, clear usage guidelines, and contractual safeguards with AI partners to navigate the tension between fostering digital innovation and preserving the integrity of their trademarks.

## Analogies Between Traditional Trademark Law and AI-driven Disputes Involving Athlete NIL and Sport Branding

The rapid expansion of AI in content creation has introduced novel challenges across IP law. While most of the AI-related litigation has so far centered on copyright and publicity rights, these developments have significant implications for trademark law, particularly in the sport industry, where team logos, athlete likenesses, and personal brands hold substantial commercial value. In this context, an athlete's NIL is not merely a personal attribute but functions as a personal trademark and source identifier. Under the Lanham Act (15 U.S.C. § 1125), an individual's name or likeness can qualify for trademark protection when it functions as a source identifier for particular goods or services. Cases arising in copyright and publicity contexts also provide useful analogies for trademark protections, as these legal frameworks share the goal of preventing unauthorized exploitation and market harm (Koenig & Mandell, 2022; McCarthy, 2024).

A key concern in the sport industry is the unauthorized use of protected content in AI training datasets. Incorporating proprietary material such as athlete names, which many athletes now register as trademarks to control the commercial use of their persona, can mislead consumers regarding endorsement or affiliation and harm licensing markets. Cases like *Andersen v. Stability AI Ltd*. (2024), *Thomson Reuters v. Ross Intel*. (2021), and *Tremblay v. OpenAI* (2024) illustrate that unauthorized ingestion of protected works may constitute infringement even if outputs are not exact replicas. By analogy, trademark law could similarly find liability where AI-generated outputs are likely to cause confusion about the source or sponsorship of goods or services, or dilute the distinctiveness of a mark (15 U.S.C. § 1114; 15 U.S.C. § 1125).

The fair use doctrine underscores the significance of commercial context in both copyright and trademark law. In copyright, courts evaluate whether a use is sufficiently transformative and whether it affects the market for the original work (*N.Y. Times v. Microsoft*, 2024; *Thomson Reuters v. Ross Intel.,* 2021). In trademark law, fair use focuses on descriptive or nominative uses, but commercial exploitation that risks consumer confusion or diminishes a mark's distinctiveness may still be actionable (*Adidas America, Inc. v. Skechers USA, Inc.,* 2018). For the sport industry, this principle applies directly to AI-generated outputs using team logos, player likenesses, or signature slogans without sufficient transformation or distinct purpose. As exemplified by Tom Brady's recent challenge against an AI-generated comedy special, public figures are increasingly willing to assert trademark-based claims to protect the source-identifying function of their names and images from unauthorized digital replication.

The expansion of AI-generated content further heightens the need to balance public interest with protection of trademark rights. When a public figure's name, image, or persona is used in ways that suggest endorsement or affiliation, courts may treat such identity-based indicators as functioning similarly to trademarks (Huq & Mitruka, 2023; 15 U.S.C. § 1125). However, legal protection is constrained by constitutional considerations, including expressive freedoms. Established trademark defenses permit transformative uses that do not mislead consumers, allowing commentary, satire, or other expressive content while limiting unauthorized commercial exploitation (*Cliffs Notes, Inc. v. Bantam Doubleday Dell Publishing Group, Inc.,* 1989; *Mattel, Inc. v. MCA Records, Inc*., 2002; *Radiance Found., Inc. v. NAACP*, 2015). This tension is acute in the sport industry, where athlete identities function as commercial assets and AI technologies can blur the line between commentary and unauthorized use. Sport organizations and athlete managers must therefore monitor both legal and technological developments to protect NIL rights, ensuring AI-generated content does not mislead fans or exploit athlete brands without authorization.

## Limitations and Future Research

A key limitation of this study is the relative scarcity of sport-specific AI trademark cases. While global brand litigation was used to draw analogies, direct application to sport organizations and athlete NIL rights requires careful interpretation, as these assets involve unique fan engagement, endorsement dynamics, and commercial considerations. Another limitation concerns the rapidly evolving nature of AI-related case law. New rulings continue to emerge, and some relevant matters were pending at the time of writing, meaning that current findings may not fully capture future legal trends or the full scope of judicial approaches. The study also relied exclusively on federal case law available through the Nexis Uni database. State-level decisions were excluded to maintain focus on federal trademark principles, which govern most commercial disputes. However, the limited number of federal sport-specific cases highlights the novelty of AI-related trademark issues and the provisional nature of current jurisprudence.

Future research could broaden both the jurisdictional and methodological scope. Analyses of state or international rulings could also provide additional context, while empirical studies examining how sport consumers perceive AI-generated content may clarify its impact on brand identity and confusion. Finally, the structural lag between technological innovation and legal developments remains a significant challenge. As AI increasingly interacts with athlete likenesses, team logos, and sport merchandising, courts are only beginning to address these complex issues. Comparative or longitudinal studies of emerging case law may help identify patterns, clarify doctrinal applications, and guide sport organizations in developing proactive strategies to protect brand and NIL value in AI-driven environments.

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