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LEGAL RESPONSES TO THE CHALLENGES OF SPORTS PATENTS

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I. INTRODUCTION

> A METHOD OF PUTTING FEATURES THE GOLFER'S DOMINANT HAND SO THAT THE GOLFER CAN IMPROVE CONTROL OVER PUTTING SPEED AND DIRECTION. THE GOLFER'S NON-DOMINANT HAND STABILIZES THE DOMINANT HAND AND THE ORIENTATION OF THE PUTTER BLADE, BUT DOES NOT OTHERWISE SUBSTANTIALLY INTERFERE WITH THE PUTTING STROKE. IN PARTICULAR, A RIGHT-HANDED GOLFER GRIPS THE PUTTER GRIP WITH THEIR [SIC] RIGHT HAND IN A CONVENTIONAL MANNER SO THAT THE THUMB ON THE RIGHT HAND IS PLACED STRAIGHT DOWN THE TOP SURFACE OF THE PUTTER GRIP. . . . THE GOLFER THEN TAKES A FULL PUTTING STROKE WITH THE ABOVE DESCRIBED GRIP.[1]

Inventors have begun to obtain patent protection for sports method inventions like the one above. Recently-granted patents cover, for example, a method for putting a golf ball,[2] a method for fitness training,[3] a method for training baseball pitchers,[4] and a method for

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1. U.S. Patent No. 5,616,089 (issued Apr. 1, 1997).

2. *See id*.

3. *See* U.S. Patent No. 6,190,291 (issued Feb. 20, 2001) (describing how a "fitness method for an exerciser combines the benefits of isometric-like exercising with isotonic exercising for simultaneous training of the exerciser's cardiovascular and skeletal musculature systems and strength and endurance buildup").

4. *See* U.S. Patent No. 5,639,243 (issued June 17, 1997) (stating that the invention "may be used to train an athlete, such as a baseball pitcher, to accurately repeat a sequence of coordinated leg, arm and torso movements").

training swings.[5] A player, team, or league gains significant benefits from exclusive control over a technique that provides a competitive advantage: it can capture sizeable economic rents by dominating sports contests or force others to license the invention. Consequently, attorneys are already urging competitors, including players, teams, and leagues, to protect their advances in technique.[6] Yet as sports patents multiply, they present a serious challenge for professional sports. To succeed, professional sports require competitive uncertainty — if the outcome is not in doubt, viewing or following sports becomes far less entertaining and attractive.[7] Sports patents threaten to dissipate that uncertainty and hence could undermine revenues for and the fan base of professional sports. Maintaining competitive balance in the face of sports patents will likely require a response at both levels of sports law: private law regulation by leagues and public law regulation by Congress, the U.S. Patent and Trademark Office ("PTO"), and federal courts.

This Article first examines the potential effects of increased patenting of sports techniques on professional sports and possible responses by public and private regulators. Next, it looks at the sports industry setting and discusses why professional sports revenues are particularly vulnerable to rent-seeking by patent holders. The Article then briefly reviews relevant patent doctrine to demonstrate the requirements necessary to patent a sports technique. It analyzes the policy implications of sports patents and concludes with suggestions for both private and public law measures remedying potential harms from these patents.

II. THE COMING CONTROVERSY OVER SPORTS PATENTS

Until recently, most commentators believed that patents for sports techniques were an uncertain proposition at best.[8] Nevertheless, ambitious inventors have persisted in seeking patents — often successfully. The Arena Football League, for instance, recently became the "only

5. *See* U.S. Patent No. 6,176,790 (issued Jan. 23, 2001) (protecting a method of training golf and similar swings where "balls of varying sizes, weights, and pliability are placed between a limb and a reactionary surface to restrict movement of a limb and nearby limbs wherein specific muscles groups are stretched and trained while imitating swing motion to induce muscle memory").

6. *See, e.g.*, Robert M. Kunstadt, *Are Sports Moves Next in IP Law?*, NAT'L L. J., May 20, 1996, at C1.

7. *See, e.g.*, Stephen F. Ross, *Monopoly Sports Leagues*, 73 MINN. L. REV. 643, 670 (1989) (citing studies demonstrating the need for competitive balance in sports leagues).

8. *See, e.g.*, Jeffrey A. Smith, Comment, *It's Your Move — No, It's Not! The Application of Patent Law to Sports Moves*, 70 U. COLO. L. REV. 1051, 1061–68 (1999) (analyzing the patentability of sports moves but recommending against it on policy grounds). *But see* Kunstadt, *supra* note 6 (arguing that "the field is open for savvy athletes and their agents to protect their innovations through patent law"); U.S. Patent No. 3,894,148 (issued July 8, 1975).

sports league in history to play [a] patented, rival-free game" when it patented its method and rules of play.[9] In light of such successes, the potential for exclusive control over a novel and useful sports technique will motivate inventors to seek patents.[10]

A patent permits the holder to exclude others from using her invention. For example, the inventor of a new golf putting method can prevent anyone else in the United States from putting this way without permission, which is generally given in exchange for compensation. This negative "right to exclude" raises important concerns for professional sports at three different levels: among individual players, among teams, and among leagues.

First, a player could patent either a competitive sports method (such as a new way to putt, grip a tennis racket, or pitch a baseball) or a sports training technique (such as the use of a new nutritional supplement or weight training program). The player could then exploit her control in one of two ways: she could prevent her competitors from using the technique, thereby putting them at a disadvantage, or she could require them to compensate her in exchange for a license to employ it. Both tactics present an opportunity for substantial remuneration.

Using the first approach, a player could win consistently and capture a large portion of available player revenues. Current professional sports resemble winner-take-all markets in that the most successful competitors reap a disproportionate share of the rewards.[11] The few top athletes gain the majority of salary and endorsement earnings, while the majority of competitors settle for small shares of the remainder. A patent on a technique conferring a competitive advantage permits the player who holds it to improve her success and hence her share of the rewards; the degree of athletic and financial success increases as the relative advantage conferred by the patented technique increases. In addition, a competitive sports technique patent rewards the first competitor to protect an invention, not the one who best employs it. If Rick Barry had patented shooting free throws underhanded, he would have enjoyed exclusive control over this method

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9. Tracey Myers, *The Great Indoors*, STAR-TELEGRAM (Fort Worth) (Mar. 24, 2004), *at* http://www.dfw.com/mld/dfw/sports/8263546.htm. *See also* U.S. Patent No. 4,911,443 (issued Mar. 27, 1990).

10. *See* Kunstadt, *supra* note 6. Note that Kunstadt, an intellectual property attorney, urges people to protect sports techniques with sports patents — advice that professional sports athletes and personnel are likely to heed. *See also* Proloy K. Das, *Offensive Protection: The Potential Application of Intellectual Property Law to Scripted Sports Plays*, 75 IND. L.J. 1073, 1082–83 (2000) (stating that "if an entire game such as arena football can be patented, and if the individual actions such as a method of putting can be patented, then it would be illogical to conclude that a team method or action would not be eligible for similar protection").

11. *See* ROBERT H. FRANK & PHILIP J. COOK, THE WINNER-TAKE-ALL SOCIETY 65–66, 79–82 (1995) (describing skewed distribution of endorsement earnings towards the top ten professional tennis players since the advent of network television coverage of matches).

even if Larry Bird could shoot that way more accurately. Thus, a sports technique patent would tend not only to improve a player's competitive position, but also to secure that improvement. Sustained success makes a player attractive both to teams (increasing salary revenue) and to advertisers (increasing endorsement revenue).

Using the second approach, a player could obtain indirect financial benefits through licensing. To avoid the competitive disadvantage discussed above, an inventor's rivals can purchase the right to use a patented invention from the holder, who can extract increasing revenues from them as the advantage conferred by the patent increases. This possibility creates a dilemma for competitors: in order to prevent the patent holder from gaining a larger share of the rewards of winning, her rivals must assign her a part of their current (and possibly future) shares. Moreover, sports patent holders can take advantage of the fact that people in winner-take-all markets tend to overestimate their chances of success.[12] Competitors who view a patent as critical to their success should offer compensation for a license based on their perceived expected winnings. Since on average their own valuations exceed their statistical expected winnings, rivals tend to overcompensate the patent holder, transferring a larger share of their revenues than would be economically efficient or practically wise. Depending on the sport, the type of technique patented, and the degree of competitive advantage conveyed, a player might realize an even more lucrative reward through this licensing scheme than by capturing the lion's share of revenues through winning consistently.

Second, a team might patent a sports method or sports training technique and seek to exclude players on other teams from using it. This approach offers a potentially significant competitive advantage on the field. Every member of the team could employ the patented technique, while no members of opposing teams could do so. As a result, a team patent would probably have an even greater deleterious effect on outcome uncertainty than one available only to a single player. Moreover, a patent could also help the team in related transactions. For example, the team might become more attractive to free agent players, who would seek to become associated with the team's success for both pecuniary reasons, such as obtaining a share in revenues from endorsements available to athletes on successful teams, and non-pecuniary reasons, such as increased individual achievement using the patented technique, enjoyment from winning consistently, and development of a reputation as a "winner." The on-field and off-field effects bolster each other — sustained success in athletic competition helps a team attract and retain talent, helping it to maintain its winning

12. *See id.* at 7–9 ("Winner-take-all markets attract too many contestants in part because of a common human frailty with respect to gambling — namely, our tendency to overestimate our chances of winning.").

ways. Competing teams would face difficulties in overcoming the patent-owning team's built-in advantage.[13] As with players, a team could likely choose between capturing a disproportionate share of revenues[14] and extracting sizeable license fees from competitors. Continual success by a single team in a league would likely make fans less interested in that league's sports product because of the lack of uncertainty in outcome.[15]

Third, a professional sports league (or other governing organization) might patent a competitive sports method or sports training technique and seek to exclude players and teams outside its membership from using it. For example, if the National Basketball Association ("NBA") had a patent for the one-handed set shot, it could prevent players in the National Collegiate Athletic Association ("NCAA"), American Basketball Association ("ABA"), and even scholastic basketball associations from employing this technique. This tactic could allow the league holding the patent to capture a disproportionate share of revenues within its sport: if the invention improved competition or made contests more entertaining, fans might prefer to consume the league's version of a sport rather than alternatives.[16] By shifting demand away from its competitors, a patent-owning league could also inhibit future competition, stopping other leagues from forming by preventing them from competing on equal terms or by forcing them to pay a high "start-up" cost to license the patented technique. If major professional sports are, in effect, natural monopolies, then inhibiting

13. Minimally, one would expect that such a patent would increase other teams' costs by forcing them to find alternatives to the patented technique (known as "inventing around" the patent) and to pay additional salary to players who would not be able to benefit from the protected invention.

14. In some leagues, rules governing team revenue, such as revenue sharing agreements, limit rent capture by teams. However, consistent success would likely translate to increased revenue from non-shared sources such as sale of local television rights, local sponsorship, and merchandising fees.

15. *See* Ross, *supra* note 7, at 670. Substantially reduced competitive uncertainty would shift the entertainment model of professional sports towards that of other options such as theater, movies, and television programs. Consumers purchase these products not because of outcome uncertainty — Hamlet always dies at the end, and few viewers doubt that Spiderman will triumph in the movie's denouement — but because of interest in how the outcome is achieved. As such, reduced outcome uncertainty would harm professional sports only to the extent that this uncertainty is a competitive differentiator from other entertainment products. Professional wrestling in the form of World Wrestling Entertainment, for example, attracts spectators and merchandising revenue despite greatly reduced outcome uncertainty.

16. This possibility assumes that a league such as the National Football League ("NFL") or NBA competes with other practitioners of the same sport. Competition seems more likely horizontally (for example, the NFL against the Canadian Football League or the now-defunct XFL) than vertically (for example, the NFL against collegiate teams in the NCAA or the NBA against high school basketball) because college basketball games only partially substitute for demand for NBA games; college basketball is perceived by fans and advertisers as a different product with different rules, level of play, and attractive elements (such as fans' loyalty to their alma maters). Hence, the risk to competition from a league owning a patent on a competitively valuable technique increases as other contests in its sport increasingly substitute for its games.

horizontal competition may cause little harm. However, if multiple major leagues are feasible, or if a major league used a patent to weaken other levels of the sport, such as collegiate athletics, then a patent-wielding league could enhance its position to the detriment of its sport.

While patents for competitive sports methods, such as athletic "moves," pose the most obvious risk, patents on sports training methods may present an equally important problem. Advances in weight training, nutrition, supplements, and conditioning have helped athletes such as Mark McGwire, Barry Bonds, and Lance Armstrong equal and shatter long-standing sports records.[17] Part of McGwire's success seems attributable to his use of the then-legal supplement androstenedione,[18] which has effects similar to testosterone and anabolic steroids. Bonds has faced persistent allegations that his increased muscle strength results from steroid use.[19] Controversy over issues such as the use of anabolic steroids persists because these drugs are extremely effective in improving competitive success as part of training and conditioning programs.[20] In endurance sports, techniques such as erythropoetin ("EPO") use give athletes an enormous edge: a key participant in a blood doping scandal with the Festina cycling team stated that cyclists not using EPO or similar drugs wound up "at the back of the pack."[21] A player, team, or league that controlled a similarly effective technique would gain a competitive advantage, even if it competed under the same playing rules as other contestants.[22]

In addition, patents on sports training techniques might have broader uses than those for competitive methods, especially in team sports. A training method that increased strength, endurance, or coordination would benefit all players on a team, while a competitive technique might be more limited, particularly in sports with specialized roles such as football or baseball. For example, a small advance

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17. *See, e.g.*, Murray Chass, *Coming Soon, Perhaps: The 80-Home Run Man*, N.Y. TIMES, Mar. 31, 2002, at A1 (describing year-round conditioning by players such as Bonds and Alex Rodriguez); Samuel Abt, *Armstrong Not Resting on His Titles*, N.Y. TIMES, Apr. 13, 2003, at 12 (describing Armstrong's conditioning program).

18. *See* Chass, *supra* note 17.

19. *See* Rafael Hermoso, *With Testimony Looming, Bonds Wins Sixth M.V.P.*, N.Y. TIMES, Nov. 19, 2003, at D1.

20. *See* James C. McKinley Jr., *Guessing the Score: Open Secret — Steroid Suspicions Abound in Major League Dugouts*, N.Y. TIMES, Oct. 11, 2000, at A1 (noting that anabolic steroids "allow an athlete to gain more muscle mass in less time by helping the body recover faster from workouts").

21. E.M. Swift, *Drug Pedaling*, SPORTS ILLUSTRATED, July 5, 1999, at 60 (quoting Willy Voet, the masseur for the Festina team who helped transport performance-enhancing drugs for the team's cyclists); *see also* Michael Bamberger & Donald Yaeger, *Over the Edge*, SPORTS ILLUSTRATED, Apr. 14, 1997, at 60 (noting that weakness in drug testing programs prompts athletes to rely on banned performance enhancers).

22. To illustrate the point, consider a hypothetical example where a league such as Major League Baseball ("MLB") permitted the use of anabolic steroids, but only one player or team had legal access to them.

in techniques for building muscle might prove more valuable to an NFL team than a revolutionary advance that allowed punters to kick the ball much farther.

Two avenues exist to address sports patent concerns, mirroring the dual frameworks governing sports generally: public law created by Congress, administrative agencies, and federal courts,[23] and private law formed by rules internal to leagues and sports organizations. Public law regulates the availability, scope, and enforcement of patents. Private law determines the conditions under which entities competing in an organized sport may employ techniques protected by patents.

Public law reform requires action by the U.S. Congress, PTO, or federal courts. Congress has previously removed or altered some kinds of patent protection based on public policy concerns. For example, when the PTO began granting patents on surgical techniques, Congress passed legislation exempting doctors and health care providers from infringement liability.[24] The new system provided surgical method inventors with recognition of their creative effort and some financial compensation (from medical device manufacturers, who remain liable for contributory infringement) but ensured that the benefits of medical advances remain available to all. In addition, in 1954 Congress denied patentability for inventions "useful solely in the utilization of special nuclear material or atomic energy in an atomic weapon"[25] and allowed the Department of Energy to license compulsorily any patented invention vital to nuclear energy or materials.[26] Similarly, Congress could remove sports-related techniques from the set of patentable subject matter, limit the scope or enforceability of such patents, or confer a specific antitrust exemption upon sports leagues to allow them to respond to this problem through private law.[27]

In addition to Congress, the PTO could also adopt procedural reforms that would limit sports patents. For example, it could require a more extensive examination process for sports-related patents to prevent protection of pre-existing techniques or methods. When faced with concerns about the growing number of business method patents granted,[28] the PTO implemented a mandatory second examination of accepted business method patent applications and moved to expand its

23. Federal district courts have exclusive original jurisdiction over patent cases pursuant to 28 U.S.C. § 1338(a) (2000).

24. *See* 35 U.S.C. § 287(c) (2001).

25. 42 U.S.C. § 2181(a) (2000).

26. *See id.* § 2183.

27. *Cf.* Sports Broadcasting Act of 1961, 15 U.S.C. § 1291 (2000) (granting an exemption to federal antitrust laws for sports league transfer of sponsored telecasting broadcast rights).

28. *See* Sabra Chartrand, *Federal Agency Rethinks Internet Patents*, N.Y. TIMES, Mar. 30, 2000, at C12.

database of information on existing methods and inventions.[29] This reform reduced the number of business method patents issued.[30] PTO examiners also have some interpretive discretion in determining whether an invention is sufficiently non-obvious to merit a patent.[31] Guidelines from the PTO could narrow the scope and availability of sports patents, influencing examiners to issue fewer and more restricted patents in this area.

This approach to limiting sports patents carries a significant risk: because it would reduce the number of patents issued, it would increase the size of "jumps" in knowledge from one patented advance to the next in a given area. As a result, the lucky few inventors who do obtain patents would receive even more power than patent holders in the status quo — they could extract the rent associated with a body of progress related to a given technique instead of just the rent associated with a single improvement.

Finally, within the area of public law, the federal courts could limit the coverage of sports patents when adjudicating patent infringement claims. Courts decide the scope of a patent as a matter of law.[32] Applying stringent scrutiny to sports patent claims could limit infringement actions by patentees, narrowing a sports patent's coverage. However, the Court of Appeals for the Federal Circuit, which reviews claim coverage findings de novo, seems unlikely to take this course.

Through private law, leagues and organizing bodies can adjust to patent concerns through contract or through rules, acting either before or after a patent holder asserts a claim of exclusivity. Contracts with players, coaches, and management could require as a condition of employment that the employee assign patent rights in sports-related inventions to the league, grant an exclusive or non-exclusive license to the league, or forgo use of patented techniques that are not commercially available on similar terms to other players. Players would consider these terms in negotiations and demand higher salaries in exchange. This type of requirement is common in employment

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29. *See, e.g.*, U.S. Patent & Trademark Off., *Business Methods Patent Initiative: An Action Plan*, *available at* http://www.uspto.gov/web/offices/com/sol/actionplan.html (last visited Apr. 12, 2005); *see also* Notification of Required and Optional Search Criteria for Computer Implemented Business Method Patent Applications in Class 705, and Request for Comments, 66 Fed. Reg. 30167 (June 5, 2001) (describing new sources and search methods to determine whether a business method patent application is invalidated by prior art).

30. *See, e.g.*, Wynn Coggins, *Business Methods Still Experiencing Substantial Growth — Report of Fiscal Year 2001 Statistics* (2002) (comparing 433 business method patents issued in class 705 in 2001 to the 899 patents issued in 2000), *available at* http://www.uspto.gov/web/menu/pbmethod/fy2001strport.html.

31. *See infra* Part IV.

32. *See* Markman v. Westview Instruments, 52 F.3d 967 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996). Typically, judges hold preliminary hearings, known as "Markman hearings," where they take testimony from experts in the patent's field, then issue an order construing the patent's claims.

agreements, particularly in technology-based industries like computers; it generally is limited to inventions that affect the employer's business.[33] A league could require teams to include this provision in player and management contracts, although it would have to consider how best to handle players and other employees with existing contracts lacking this language. The governing bodies of non-team sports could demand similar concessions from athletes before allowing them to participate.

A league could also change its governing rules and by-laws to prevent use of a patented technique unless it was available to others in the league. Such a requirement would effectively create a compulsory license for patents held by players or teams, but would let the patent holder continue to benefit from exclusive protection against non-league users. This approach offers two benefits. First, players and teams may find it more palatable than a structure that requires them to assign inventions to the league. Second, it would take effect immediately, covering even those employees with existing contracts. In the major U.S. team sports, both of these changes would require approval by a players' union as part of collective bargaining negotiations.

A league can also choose whether to address the potential harm from exclusive use of patented techniques preventively or to wait until the issue takes concrete form. Preempting the problem allows the league to avoid resistance from entrenched patent holders: an average player or team who may or may not invent a new technique in the future is far less likely to oppose — and, especially, to litigate against — new restrictions than the holder of an existing patent. Delaying action until a problem actually arises, however, allows the league to shape its response based on the specific contours of the actual problem.

Sports patents have become available as a way to assert exclusive control over competitive advances. This control threatens to detract substantially from the entertainment value of professional sports, which depend on uncertain outcomes for their appeal. Both public and private law responses to mitigate this risk are available; as the next section demonstrates, creating a solution is vital because of the unusual dynamics of the sports industry.

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33. *See, e.g.*, Nick dePlume, *Netflix Fanatic*, THINK SECRET (Nov. 17, 2003) (describing Apple's attempt to take ownership of a software program developed by an employee because the employment contract required him to assign inventions to the company and noting that California labor laws prohibit such terms unless the invention relates to the employer's business), *available at* http://www.thinksecret.com/news/netflixfanatic.html.

III. CAPTURING RENTS IN PROFESSIONAL SPORTS

Professional sports in the United States feature intense competition and widespread appeal that combine to generate enormous revenues. This competition, as well as the huge rewards available to consistent winners, increases both the incentive to gain a competitive advantage through patent and the risk such patents pose to a sport's popularity and financial prosperity.

Professional sports display the characteristics of winner-take-all markets.[34] Successful and popular teams generate a disproportionate share of a league's revenues and may seek to retain that income stream despite countervailing revenue-sharing structures. Intellectual property offers one way to generate and retain income. For example, teams in the National Football League ("NFL") collectively license team names, helmet designs, uniform designs, and slogans for merchandising exclusively through a separate entity, NFL Properties.[35] The league allocates net profits from merchandising fees paid to NFL Properties equally among teams.[36] During the height of the Dallas Cowboys' success in the mid-1990's, the team's merchandise generated roughly twenty-five percent of NFL Properties' revenues, yet the Cowboys received only 3.3 percent of the net proceeds.[37] Dissatisfied with this disparity, the Cowboys' owner, Jerry Jones, devised a means to evade the league-mandated revenue sharing and to capture part of the large fraction of revenues attributable to the team's popularity. He completed agreements with Nike, Dr. Pepper, Pepsi-Cola, Pizza Hut, American Express, and other businesses to use the name and logo of Texas Stadium, where the Cowboys played their home games.[38] The NFL and the Cowboys settled their dueling suits over the propriety of this move, allowing the team to maintain its agreements.[39]

In 1997, the New York Yankees signed a similar sponsorship deal with Adidas[40] that led Major League Baseball ("MLB") to suspend owner George Steinbrenner from its Executive Council.[41] Based on the team's 1996 World Series victory and marketing popularity, the Yankees negotiated a ten-year, $95 million agreement offering them a

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34. *See* FRANK & COOK, *supra* note 11, at 79–82.

35. *See* NFL Props. v. Dallas Cowboys Football Club, 922 F. Supp. 849, 851 (S.D.N.Y. 1996).

36. *See id*.

37. *See* Jeffrey Meitrodt, *Follow the Money*, NEW ORLEANS TIMES-PICAYUNE, Jan. 24, 1997, at S36.

38. *See NFL Props.*, 922 F. Supp. at 853.

39. *See* Richard Sandomir, *Jones-N.F.L. Lawsuits May End in a Draw*, N.Y. TIMES, Dec. 10, 1996, at B17.

40. *See* Richard Sandomir, *Yankees Join With Adidas In a Lawsuit*, N.Y. TIMES, May 7, 1997, at B19.

41. *See* Murray Chass, *Steinbrenner Banned As Executive Council Member*, N.Y. TIMES, May 14, 1997, at B11.

significant premium over the revenue the team could earn from a league-wide sponsorship deal dividing revenues evenly among all teams.[42] Faced with an antitrust lawsuit by the Yankees and Adidas, MLB restored Steinbrenner to the Council and signed a sponsorship agreement with Adidas.[43]

Though these disputes generated no legal precedent, the business conclusions are clear. A team that succeeds consistently on the field often generates a disproportionate share of its league's revenues. This team will seek to capture as much of this income as possible,[44] and it may succeed at doing so. A patent on a valuable technique could create a consistently winning team like the Cowboys or Yankees. This team could then generate, and seek to retain, a large share of revenue relative to its competitors. As *Dallas Cowboys* demonstrates, public law (antitrust) may limit or prevent private law solutions (mandatory revenue sharing) to this problem.

Outstanding individual players can also capture significant rents relative to other, slightly less successful or talented players. Consider the professional basketball player Shaquille O'Neal, who commands a salary of $27.7 million this season — over $11 million more than 2004 NBA Most Valuable Player Kevin Garnett, and over $10 million more than the two next-highest-paid players.[45] O'Neal's teammate during his championship seasons with the Los Angeles Lakers, Kobe Bryant, will earn $136 million over the next seven years, an average of $19.4 million – less than O'Neal, even though the Lakers chose to trade Shaq rather than Kobe in the NBA offseason.[46] Even if a competitor's ability to capture salary revenue is limited by a sport's internal structures, such as a salary cap or luxury tax, he or she may still be able to obtain endorsement income that far exceeds that of other elite players. For example, Lance Armstrong reportedly earns in excess of $10 million per year for endorsing products and brands such as Nike, Subaru, and the U.S. Postal Service[47] — income well beyond that paid to other cyclists. Armstrong's string of victories in the Tour de France, cycling's most famous contest, makes him unusually attrac-

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42. *See* Murray Chass, *Suit Seeks To Increase Yankees' Revenue*, N.Y. TIMES, May 15, 1997, at B8.

43. *See Yanks and Baseball Settle Suit*, N.Y. TIMES, May 1, 1998, at C4.

44. The merchandising dispute between the Cowboys and NFL Properties also highlights the value of intellectual property, such as trademarks, to teams and leagues, and the value that exclusive control over intellectual property provides. An AT&T spokesman said, "We value the Texas Stadium name over the Cowboys'." Sandomir, *supra* note 39.

45. *See* NBA Salaries, InsideHoops.com, *at* http://www.insidehoops.com/nbasalaries.shtml; *see generally* Bud Poliquin, *Green Pastures Abound in NBA*, SYRACUSE POST-STANDARD, Nov. 2, 2004, at D7.

46. *See* Robert Jablon, *Kobe's Marketing Power Is In Danger No Matter How the Rape Case Turns Out*, ASSOC. PRESS, Aug. 29, 2004; Chris Broussard, *Bryant Chooses to Remain a Laker*, N.Y. TIMES, July 16, 2004, at D1.

47. *See* Ross Kerber, *Armstrong Goes Pedaling, Peddling Along*, BOSTON GLOBE, July 1, 2003, at A1.

tive to companies who wish to be associated with his success. Similarly, even three years after his retirement, Michael Jordan earned $36 million from endorsements in 2002 because "he remains far more popular than dozens of athletes who still are at the peak of their abilities."[48] LeBron James's $90 million contract with Nike to endorse the company's shoes dwarfs the endorsement incomes of other players drafted by NBA teams in 2003,[49] as well as the $12.96 million over three years he will make to play basketball for the Cleveland Cavaliers.[50] These enormous rewards create tremendous incentives — and pressures — for athletes to achieve and maintain competitive success. Obtaining exclusive control over a technique creating competitive advantage would thus prove attractive and lucrative.

Leagues can also obtain huge financial rewards for providing an entertaining sports product, both directly from ticket and broadcast revenue and indirectly through other revenue sources, such as merchandising. MLB's broadcast television rights generate $600 million per year, while NASCAR's television deal brings in $400 million per year.[51] In 1998, merchandise related to professional sports comprised $15 billion of a $70 billion per year market, with the NFL alone accounting for $3.5 billion in annual sales.[52] Successful leagues need to maintain their attractiveness against alternative entertainment choices — not only against other products such as television and movies, but also against competing sports. Sports leagues can attract large revenues from television broadcasting, merchandising, and sponsorships partly by creating uniquely attractive entertainment events, such as the NFL's Super Bowl or the NCAA's March Madness basketball tournament. The viability of these events depends on interest in the underlying sports product to at least some degree,[53] and hence changes that reduce interest in that sport undermine the income stream from them.

IV. A BRIEF OVERVIEW OF U.S. PATENT DOCTRINE

48. Michael Hirsley, *Taking Air out of Sales*, CHI. TRIB., Nov. 27, 2002, at 1.

49. *See* Greg Couch, *James the Pinnacle in Evolution of Hype*, CHI. SUN-TIMES, Oct. 29, 2003, at 146.

50. *See* Assoc. Press, *Deal Worth Almost $13 Million in First Three Years* (July 3, 2003), *available at* http://espn.go.com/nba/news/2003/0703/1576436.html. James's salary is limited by NBA constraints on compensation paid to drafted rookies in their initial contracts.

51. *Right Fees for Sports*, N.Y. TIMES, Nov. 9, 2003, at 10.

52. PAUL C. WEILER & GARY R. ROBERTS, SPORTS AND THE LAW 390 (2d ed. 1998).

53. Both the NFL and the NCAA have succeeded to a degree in establishing the Super Bowl and March Madness as *sui generis* events with an existence (and attractiveness to advertisers) separate from the quality of the athletic contests involved. However, this separate existence would come under pressure if the underlying sport itself became less interesting to spectators.

Potential public and private law solutions to the problems of sports technique patents involve considerations of patent availability, scope, enforcement, and transfer. To assess their merit as responses, one must understand the basic principles of patent law. This section provides a brief overview of the subject.

Legal theorists assert two main justifications for protecting useful inventions with patents: utilitarian incentives and labor-desert rewards for creativity and authorship. The utilitarian argument posits that inventors will not invest the energy, resources, and ingenuity necessary to create unless they are assured of recouping these costs.[54] Inventive advances are easily copied in most cases; this reproducibility converts inventions into public goods and prevents the innovator from benefiting adequately from her creation.[55] Protecting inventions through a government-enforced monopoly rewards innovators financially by allowing them to obtain monopolistic rents on the inventions, but also creates countervailing harms to consumers in the form of higher prices.[56] The utilitarian justification holds only so long as the benefits of the incentive effect from the monopoly (in greater output of useful inventions) outweigh the costs to consumers.[57] Overall, consumers generally benefit from patent protection; even though they must pay prices above marginal cost for new inventions, this additional cost spurs the productive activity needed to create the inventions initially.[58] Utilitarian theory based on economic incentives dominates analysis of patent law.[59]

Labor-desert theory provides a weaker but still influential justification for rewarding inventors with a period of exclusive control over their inventions.[60] Creators of intellectual works form new, useful

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54. *See* William W. Fisher III, *Reconstructing the Fair Use Doctrine*, 101 HARV. L. REV. 1661, 1698–703 (1988) (discussing the need for protection of intellectual works in the context of patent and copyright).

55. *See generally* Note, *Is the Patent Misuse Doctrine Obsolete?*, 110 HARV. L. REV. 1922, n.60 (1997) (briefly summarizing the economic justification for patent protection).

56. *See* Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813, 1822–28 (1984).

57. *See* Fisher, *supra* note 54, at 1703 (stating that optimal protection for intellectual property maximizes the sum of economic gains from protection minus the sum of efficiency losses).

58. *See id.* at 1703 ("[The] 'gains' associated with a given combination of rights are the value to consumers of those intellectual products that would not have been generated were creators not accorded those rights."). More precisely, one can calculate these gains as "the present value of what consumers would be willing to pay in the future for the works whose creation is induced by the rights, minus the present value of the costs that would be incurred in producing them." *Id.* at 1703–04.

59. *See, e.g.*, Graham v. John Deere Co., 383 U.S. 1, 5–11 (1966); Roberts v. Sears, Roebuck & Co., 723 F.2d 1324, 1347–48 (7th Cir. 1983) (Posner, J., concurring) (reversing finding of patent infringement because the jury was incorrectly permitted to decide obviousness but dissenting because economic analysis of invention should require entering a judgment of invalidity based on obviousness).

60. *See* ROBERT NOZICK, ANARCHY, STATE AND UTOPIA 178–82 (1977).

items by mixing their insight with the common stock of ideas; the patent recognizes and rewards their skill.[61] Protection based on creativity and authorship[62] is intuitively less compelling for patented inventions because the utilitarian nature of these innovations seems less infused with the creator's personality: people identify a new snowboard binding less with its inventor than they do a book or a song with its author, for example.[63] Moreover, the application of labor-desert theory to patent law provides little guidance for construing the scope and term of protection and does not seem limited to guarding only useful inventions.

Based on these theoretical justifications, a patent system in the United States emerged shortly after the country's creation. The Constitution explicitly recognizes the value of protecting inventions through limited government-sanctioned monopolies, empowering Congress to "promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[64] Congress quickly enacted legislation establishing a patent system.[65] It has revised and expanded patent protection over time. Recent developments include the establishment of the Circuit Court of Appeals for the Federal Circuit ("CAFC"), a specialized court with exclusive jurisdiction over patent appeals,[66] and the reform of patent terms and procedures to comply with the requirements contained in the World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS").[67] These changes reflect the practical needs and tensions underlying the patent monopoly.

To obtain a patent in the United States, the inventor must submit an application to the PTO that indicates the field of the invention, describes the problem it addresses, and references similar past inventions (known as "prior art"). Most importantly, the application must

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61. *See generally* Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 305–10 (1988) (discussing role of labor-desert theory in American copyright and French and German patent systems). Hughes also describes other influential non-utilitarian justifications for copyright and patent protection, such as creativity theory and personality theory. *See generally id*. at 297–325. These theories share most of the characteristics of labor-desert theory discussed in this Article.

62. *See* Peter Jaszi, *Toward a Theory of Copyright: The Metamorphoses of "Authorship,"* 1991 DUKE L.J. 455, 500–02 (1991).

63. *See* A. Samuel Oddi, *Un-Unified Economic Theories of Patents — The Not-Quite-Holy Grail*, 71 NOTRE DAME L. REV. 267, 269–70 (1996).

64. U.S. CONST., art. I, § 8, cl. 8.

65. Patent Act of 1790, ch. 7, 1 Stat. 109–12 (1790).

66. *See* Federal Courts Improvement Act of 1982, 28 U.S.C. § 1295(a)(1) (2000).

67. *See* Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 2004, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, LEGAL INSTRUMENTS — RESULTS OF THE URUGUAY ROUND vol. 31, 33 I.L.M. 81 (1994) [hereinafter "TRIPS"]. The relevant U.S. legislation is Uruguay Round Agreement Act, Pub. L. No. 103–465, 108 Stat. 4809 (codified in scattered sections of 10 U.S.C.) (1994).

include claims: one or more sentences that specify precisely what the applicant purports to have invented and define the scope of the potential patent's exclusivity. Any item that fits within the description of a valid patent's claims and was produced without the patentee's consent infringes that patent; the claims, however, are construed narrowly. For example, if Ben Hogan holds a golf club patent that claims "a club with an angle between the handle and head greater than 45 degrees," a company manufacturing a club with a head angle of 50 degrees infringes Hogan's patent, while a company manufacturing one with a head angle of 40 degrees (or 45 degrees) does not. Thus, drafting claims is critically important in applying for a patent.

Once obtained, a valid patent confers exclusive rights to the inventor for twenty years from the date the patent application was initially filed.[68] These rights are negative in character, giving the inventor authority to prevent others from making, using, selling, offering to sell, or importing the patented invention during the patent's term.[69] A patent offers tight control to the inventor, preventing even independent invention or reverse-engineering.[70] However, patent protection is nationally limited — a U.S. patent creates no rights for an inventor in Canada, for example. Seeking patents in multiple jurisdictions is complex and expensive, but frequently necessary.

Currently, an inventor must prove five things to obtain a patent under U.S. law. Her invention must be within the scope of patentable subject matter,[71] useful,[72] novel,[73] non-obvious to a practitioner in the field,[74] and described adequately.[75] The subject matter qualifying for a patent is extremely broad. Traditionally, one could patent a "process, machine, manufacture, or composition of matter."[76] Congress added items such as plants,[77] while courts expanded coverage to purified

68. *See* 35 U.S.C. § 154(a)(2) (2000); *see also* Mark A. Lemley, *An Empirical Study of the Twenty-Year Patent Term*, 22 AM. INTELLECTUAL PROP. L. ASS'N Q. J. 369, 370 (1994) (describing changes in U.S. patent term to conform to the General Agreement on Tariffs and Trade).

69. *See* 35 U.S.C. § 271(a) (2000). A patent does not confer the corresponding positive right to make or use the invention. *See* Joseph Scott Miller, *Building a Better Bounty: Litigation-Stage Rewards for Defeating Patents*, 19 BERKELEY TECH L.J. 667, 692 (2004) (discussing "blocking patents").

70. *See* Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 160 (1989) (stating that "prohibit[ing] the entire public from engaging in a form of reverse engineering of a product in the public domain . . . is clearly one of the rights vested in the federal patent holder").

71. *See* 35 U.S.C. § 101 (2000).

72. *See id.*

73. *See id.* § 102.

74. *See id.* § 103.

75. *See id.* § 112.

76. *Id.* § 101.

77. *See id.* § 161 (covering asexually reproducing plants); Plant Variety Protection Act of 1970, 7 U.S.C. § 2402 (2000) (covering sexually reproducing plants); *see also* J.E.M. AG

natural substances,[78] genes,[79] and software.[80] Now, one may protect business methods,[81] living organisms,[82] and surgical techniques[83] as well as sports methods,[84] although one cannot patent abstract ideas.[85] The expansion of patentable subject matter is ongoing and quite controversial.[86]

An invention must be useful to obtain a patent.[87] This utility requirement creates only a minor obstacle for inventors. Two types of utility apply: general and specific. General utility requires only that the invention actually accomplish some tangible result; it must be more than "a mere curiosity, a scientific process exciting wonder yet not producing physical results."[88] Specific utility mandates that the invention in fact perform the desired and described function; for example, the PTO rejected a patent application for a perpetual motion machine because, sadly, the machine failed to produce perpetual motion.[89] Early court decisions rejected some inventions as non-useful because their only uses were illegal or immoral.[90] However, this view

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Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc., 534 U.S. 124, 145 (2001) (holding that plants may be patented under 35 U.S.C. § 101 as well as the specific plant patent statutes).

78. *See, e.g.*, Parke-Davis & Co. v. H. K. Mulford Co., 189 F. 95, 115 (C.C.S.D.N.Y. 1911) (permitting patent on a purified form of naturally occurring adrenalin).

79. *See* S.M. Thomas et al., *Ownership of the Human Genome*, 380 NATURE 387 (1996) (analyzing patents on human DNA).

80. *See, e.g.*, U.S. Patent No. 6,640,241 (issued Oct. 28, 2003).

81. *See* State Street Bank & Trust Co. v. Signature Fin. Group, 149 F.3d 1368, 1370 (Fed. Cir. 1998) (permitting patent on method of calculating a share price for a mutual fund with monies invested in different instruments).

82. *See* Diamond v. Chakrabarty, 447 U.S. 303, 318 (1980) (permitting patent upon novel type of oil-eating bacterium); *see also* Ex Parte Allen, 2 U.S.P.Q.2d (BNA) 1425, 1427 (Bd. Pat. App. & Int. 1987) (finding that a genetically engineered oyster could be patented, but that this particular oyster was obvious based on prior art).

83. *See, e.g.*, U.S. Patent No. 5,080,111 (issued Jan. 14, 1992). Patents on surgical methods led Congress to amend the patent laws to absolve medical practitioners and health care entities of infringement liability for using patented techniques; however, patent owners continue to enjoy protection against contributory infringement (for example, against medical device manufacturers producing tools adapted specifically to perform the patented technique). *See* 35 U.S.C. § 287(c) (2001).

84. *See, e.g.*, U.S. Patent No. 5,616,089 (issued April 1, 1997).

85. *See* Rubber-Tip Pencil Co. v. Howard, 87 U.S. 498, 507 (1874) (stating that an "idea of itself is not patentable, but a new device by which it may be made practically useful is"); *see also* O'Reilly v. Morse, 56 U.S. 62, 112–13 (1853) (rejecting inventor Morse's claim to patent "electro magnetism").

86. *See, e.g.*, Robert B. Kaiser, *3 Clerics Urge President and Congress to Set Up Controls on Genetic Engineers*, N.Y. TIMES, July 15, 1980, at A16 (quoting three religious leaders whose reaction to *Chakrabarty* was that "[c]ontrol of such life forms by any individual or group poses a potential threat to all of humanity").

87. 35 U.S.C. § 101 (2002).

88. 1 W. ROBINSON, TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS 463 (1890).

89. *See* Newman v. Quigg, 877 F.2d 1575, 1582 (Fed. Cir. 1989).

90. *See, e.g.*, Richard v. Du Bon, 103 F. 868, 873 (2d Cir. 1900) (invalidating patent on process for producing spots on lower-grade domestic tobacco to mimic better-quality imported tobacco); Meyer v. Buckley Mfg. Co., 15 F. Supp. 640, 641 (N.D. Ill. 1936) (rejecting patent for game of chance machine because of the purported immorality of gambling).

of utility has weakened. An inventor may now obtain a patent as long as a device has a possible legal use.[91]

Utility doctrine has two interesting effects for sports patents. First, most sports techniques clear the utility hurdle because the unceasing competition in sports makes verifying the usefulness of a claimed invention relatively straightforward.[92] Second, the fact that illegality and immorality no longer undermine utility expands the range of patentable sports inventions. For example, one could obtain a patent on using a new anabolic steroid to build muscle strength in athletes, even if sports leagues banned this training method for their players.[93] Utility now requires only efficacy, not permissibility; Gaylord Perry could potentially patent his spitball even if he could not use it in MLB competition.[94] Any advance, licit or illicit, providing a competitive advantage in sports likely meets the utility test for patenting.

The patent system also requires novelty: the applicant must be the first to create the invention.[95] The PTO verifies novelty by examining the prior art in the field as of the date the applicant claims to have invented the item.[96] Additionally, a "statutory bar" denies a patent if the invention is described in a publication or patented in any country, used in the United States, or offered for sale in the United States for more than a year before the inventor applies.[97] The statutory bar spurs inventors to patent their inventions before exploiting them. Sports patent applicants may face particular difficulty overcoming both the novelty requirement and the statutory bar due to the extensive media coverage of sports. For example, high jumper Dick Fosbury began

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91. *See* Whistler Corp. v. Autotronics, Inc., 14 U.S.P.Q.2d (BNA) 1885 (N.D. Tex. 1988) (allowing patent on radar detector because not all states ban these devices).

92. The widespread media coverage of professional sports, including taped television broadcasts, should ease the task of the PTO in identifying which inventions are truly novel — prior art is copious and readily available.

93. The designer of the steroid tetrahydrogestrinone ("THG") likely could patent its use for training and conditioning even though leagues such as the NFL have found that its use violates their substance abuse policies. *See generally* Damon Hack, *N.F.L. to Impose Old Penalties for New Steroid*, N.Y. TIMES, Oct. 30, 2003, at D1.

94. *See* GAYLORD PERRY & BOB SUDYK, ME AND THE SPITTER: AN AUTOBIOGRAPHICAL CONFESSION (1974).

95. The United States grants patents to the first person to invent the innovation (subject to requirements such as diligence in producing an embodiment of the invention), while most other nations award patents to the first inventor who files an application for the invention. *See generally* Peter A. Jackman, *Adoption of a First-to-File Patent System: A Proposal*, 26 U. BALT. L. REV. 67 (1997).

96. 35 U.S.C. § 102(a) (2000) (barring a patent where "the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent"); *see also id*. § 102(e) (barring a patent where the invention is the subject of a § 122(b) patent application); *id*. § 102(b) (barring a patent where another inventor filed a patent application on the item before the applicant claimed to have invented it).

97. *See id*. § 102(b).

practicing his famous "flop" as a teenager.[98] If a sportswriter described the flop in an article about one of Fosbury's high school track meets, Fosbury could not patent the move, even if he applied in 1967 (before his use of the technique won the gold medal in the 1968 Mexico City Olympics).[99] In short, sports techniques not only must be new to be protected, but their inventors must apply for protection quickly.

An invention also must be a sufficient advance or change from the existing state of technology in its field that it would not have been "obvious."[100] Whether an invention is obvious is measured from the perspective of the hypothetical person having ordinary skill in the art (the "PHOSITA") of the subject matter of the invention.[101] The extent to which the invention must advance beyond the background knowledge in its field in order to be patented is known as the inventive step.[102] The length of the inventive step required varies by industry — generally, as a field matures, greater innovation is needed for protection.[103] As the PHOSITA becomes more skilled, she anticipates more inventions as obvious, and patents become harder to obtain. The major professional sports have long histories characterized by intense competition, and it is likely that the PTO and CAFC would interpret the sports PHOSITA as relatively expert, requiring sports inventions to be more innovative to obtain patent protection.[104]

Unlike the other four restrictions, the adequate description requirement governs not what may be patented, but what information an inventor must disclose about an invention in exchange for protection.[105] Adequate description has three components: written description, enablement, and best mode.[106] The written description requirement helps elucidate the invention's limits and proves the in-

98. *See* Roy Blount, Jr., *Being Backwards Gets Results*, SPORTS ILLUSTRATED, Feb. 10, 1969, at 24.

99. *See id.* (describing Fosbury's accomplishments). Note the possible complexity of the § 102(b) statutory bar. Description in a U.S. or Mexican publication more than a year before Fosbury's hypothetical application would block a patent, as would public use in the United States. However, public use in Mexico (such as during the Olympic Games) would not block a U.S. patent. *See* 35 U.S.C. § 102(b).

100. *Id*. § 103.

101. *Id*.; *see also* Graham v. John Deere Co., 383 U.S. 1, 14–16 (1966) (noting that the knowledge of the PHOSITA varies by field of invention).

102. *See* Harold C. Wegner, *The Disclosure Requirements of the 1952 Patent Acts*, 37 AKRON L. REV. 243, 259 (2002).

103. *See* Dan L. Burk & Mark J. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155, 1156–57 (2002) (contrasting the inventive step required by the CAFC for the biotechnology and software industries).

104. Examples seem innumerable. In the post-World War II era of baseball, a PHOSITA might not anticipate the slider if he threw a curveball, but the increased sophistication of the game by the 1980's might mean that the split-fingered fastball anticipates the forkball.

105. *See* 35 U.S.C. § 112 (2000); *see also* Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1479 (Fed. Cir. 1998) (finding that Gentry's patent on a reclining sofa did not describe locating the recliner controls anywhere other than on the sofa's console, and hence Berkline's sofa did not infringe the patent).

106. *See* 35 U.S.C. § 112.

ventor actually invented what she claims.[107] The enablement requirement ensures that the application provides enough information to enable the relevant PHOSITA to reproduce the invention.[108] The inventor need not describe techniques or include information that the PHOSITA would be expected to know, but must ensure that the public can make use of the invention once her exclusive control ends. The best mode requirement forces an inventor to describe the best way, materials, or approach to creating the patented invention.[109] It applies only if the inventor knows that one possible approach to or embodiment of the invention is superior to others.[110] For example, if Gatorade sought to patent a new sports drink that helped marathon runners avoid fatigue and knew that while several different blends of vitamins and carbohydrates produced a significant effect, one particular blend worked best, it would have to disclose this blend in its patent application. The best mode requirement minimizes costs of reproducing the invention after the patent expires by avoiding the need to experiment to make optimal use of it. Thus, best mode and other disclosure mandates convey the benefits of the invention to the public in exchange for the term of protection.

Sports methods fall within the subject matter coverage of the patent laws, but inventors must prove utility, novelty, and non-obviousness to obtain protection. Their patent applications must adequately describe the invention and guide the public in reproducing it in exchange for exclusive control over creation, use, sale, and importation for twenty years. Sports inventors likely face relatively strict requirements for novelty and non-obviousness due to the wide range of prior art available. This stringency cuts back the number of sports patents available, but it ensures that each protected invention connotes a more significant advance in its field. Public authorities and private regulating bodies must consider the effects of the patent law requirements in crafting methods to avoid the potential competitive harms of sports patents.

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107. *See* In re Gosteli, 872 F.2d 1008, 1012 (Fed. Cir. 1989); *see also* Lockwood v. Am. Airlines, 107 F.3d 1565, 1572 (Fed. Cir. 1997).

108. *See, e.g.*, Johns Hopkins Univ. v. CellPro, Inc., 152 F.3d 1342, 1360 (Fed. Cir. 1998) ("[It] is imperative when attempting to prove lack of enablement to show that *one of ordinary skill in the art* would be unable to make the claimed invention without undue experimentation.").

109. *See* 35 U.S.C. § 112; *see also* Phillips Petroleum Co. v. U.S. Steel Corp., 673 F. Supp. 1278, 1333 (D. Del. 1987), *aff'd*, 865 F.2d 1247 (Fed. Cir. 1989) ("[The] best mode requirement deals with that contemplated by the inventor at the time of the filing, not the best mode in an absolute sense. . . . Compliance with the requirement is satisfied when the inventor discloses his preferred embodiment.").

110. *See* Eli Lilly & Co. v. Barr Labs., 251 F.3d 955, 963 (Fed. Cir. 2001) (describing the "two-prong" inquiry for best mode that assesses whether the inventor possessed a best mode and whether she described it in her patent application).

V. POLICY ANALYSIS AND PRESCRIPTIONS FOR SPORTS PATENTS

The optimal solution to the challenge of patented techniques to professional sports would be a combined public/private law solution, where Congress passes legislation that recognizes innovation while limiting anticompetitive effects and permits leagues to govern the use of patented techniques, and where leagues require compulsory licensing of techniques internally. Congress, however, is not likely to act until patents begin to impair competition or revenues in professional sports. Consequently, organizing bodies and leagues should adopt private law solutions unilaterally to forestall or limit potential problems. If this approach proves effective, legislation may not be necessary. If it fails, leagues may gain persuasive evidence bolstering their case for legislation. This Part reviews guiding principles for solutions based on patent theory and then evaluates proposals for public and private law reforms.

Patent theory justifies the negative effects of temporary monopolies on useful inventions either to produce innovation (utilitarian philosophy) or to recognize the creative genius of inventors (labor-desert theory).[111] Sports patents on competitive techniques fail the utilitarian test, but patentability may benefit training methods by expanding the number of innovators and inventions. Under the labor-desert theory, both types of patents gain some support for the effort and creativity required.

Patents on competitive techniques are both unnecessary, because other incentives drive innovation, and unusually harmful, because monopoly control creates high costs. First, patent benefits from encouraging invention are marginal since competitive pressures force participants in professional sports to innovate regardless of intellectual property protection. Intense competition in sports generates powerful incentives to innovate; professional athletes constantly train and experiment to obtain even a slight edge over rivals. New methods help competitors compensate for their weaknesses and overcome others' strengths. This competitive pressure helps to explain why sports have a history of innovation without patent protection. Fosbury's flop, the forward pass in football, the slider in baseball, and the "butterfly" goaltending style in hockey all appeared without the security of patents.[112]

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111. *See supra* Part II.

112. *Cf.* Edwin Mansfield, *Patents and Innovation: An Empirical Study*, 32 MGMT. SCI. 173, 174–75 (1986) (calculating the percentage of inventions in twelve industries that would not have been introduced or developed without patent protection from 1981–83 and finding that sixty-five percent of pharmaceuticals would not have been introduced, but zero inventions in motor vehicles or textiles were affected by the presence or absence of patent coverage).

Second, sports innovation rewards competitors even for brief, temporary advantages. Competitive success in high-stakes venues such as a major golf tournament, the Olympic Games, or the Super Bowl produces both immediate financial benefits and future endorsement opportunities, even if an athlete's exceptional performance is an aberration.[113] Other athletes need time and practice to adopt an innovation even if they can acquire information about how to copy it quickly and easily.[114] This first-mover advantage lets athletes reap rewards from innovation even where copying is not only permitted but strongly encouraged. Hence, sports leagues do not need to incur the costs of patent monopoly to spur innovation in athletic methods.[115]

Third, monopoly costs from exclusive control over useful techniques are unusually high in an environment where a competitor needs not only to defeat its rivals, but also to ensure that those rivals provide a consistently convincing and entertaining challenge. If a patent lets a competitor create and maintain a competitive edge and other athletes have difficulty inventing around the patent, both actual and perceived competition may be reduced. Patent law tolerates the possibility of monopoly in a market as a necessary cost of innovation.[116] However, monopoly in the form of competitive dominance harms both the inventor and her sport by reducing attractiveness to and revenue from fans. Overall, from a utilitarian perspective, patents on sports techniques used in competition seem undesirable.

Utilitarian analysis for sports training and preparatory techniques, though, is more complex. Innovation for training comes increasingly from outside entities, such as nutrition supplement companies and personal trainers, and not from athletes, teams, or leagues. This external industry is likely more responsive to intellectual property protec-

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113. Consider the case of Dallas Cowboys cornerback and Super Bowl XXX Most Valuable Player Larry Brown. Brown was a largely unknown player before intercepting two passes and winning MVP honors in the Super Bowl; he went on to sign a five-year, $12.5 million contract with the Oakland Raiders based on this performance but contributed minimally to and played sparingly for his new team. *See* Jerry Brewer, *Burned: That's What Often Happens When Teams Play with the Fires of Free Agency*, ORLANDO SENTINEL TRIB., Aug. 4, 2002, at C1. Success in a highly visible, high-stakes setting can create substantial rewards in professional sports regardless of an athlete's overall track record of performance.

114. Information on sports methods used in competition would likely be available immediately given the intense media coverage of professional sports, but training techniques might remain relatively opaque for a period of time since teams and athletes often limit access to their training routines.

115. *See id.* at 176–77 (noting that firms in industries such as textiles and motor vehicles where patent protection is relatively unimportant for innovation still sought patents for sixty-six percent of patentable inventions for purposes such as causing delay to prospective imitators and using patents as bargaining chips). Patent might create additional incentives to innovate, but this uncertain benefit must be weighed against substantial costs.

116. *See, e.g.*, United States v. Line Material Co., 333 U.S. 287, 305 (1948) ("Within the limits of the patentee's rights under his patent, monopoly of the process or product by him is authorized by the patent statutes.").

tion than competitive sports — ease of copying means that without protection, new inventions are rapidly copied. Unlike competitors, outside inventors have limited incentives to innovate in this area without patent protection. Offering patents for training methods may expand the number of inventors and inventions in this area.

From a labor-desert perspective, patents for sports techniques build a stronger case. Obtaining recognition through a patent may be unnecessary for inventors of athletic methods. Dick Fosbury, for example, is always identified with his eponymous flop. The media attention, popular acclaim, and financial rewards available to sports innovators who create competitive methods may sufficiently reward and recognize their labor and genius in creating the invention. However, competitive pressures in professional sports push athletes to adopt successful techniques quickly. Where other athletes rapidly improve upon the execution of a new technique, or use it as a base for their own innovation, the inventor's identity may be lost as attention focuses on more successful users or later innovators.[117] Thus, a patent may serve as proof and tangible recognition of creative, useful innovation in sports.

This need for recognition is particularly acute where the inventor is not a famous athlete. An athletic trainer who produces a new training method or an amateur golfer who perfects a new putting style lacks access to media attention or professional acclaim without patent protection — others can simply copy his or her method and popularize its use. Conferring a patent on these inventors lets them force others to recognize their hard work and creativity through public attention and possibly through financial rewards. Thus, labor-desert theory justifies patent protection for sports methods in at least some cases.

These theoretical considerations should inform attempts by either public or private bodies to address the role of patents in sports. As a relatively disinterested regulator, Congress is best positioned to address the scope of sports patents. Some commentators suggest that Congress withdraw sports techniques from the subject matter eligible for patent protection.[118] This approach eliminates the anticompetitive effects from sports patents, but fails to consider properly the need to recognize innovation suggested by labor-desert theory.

A better Congressional solution would alter the rights patent protection grants to inventors of sports-related techniques. Here, Congress should distinguish between methods used in competition and

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117. For example, former National Hockey League goaltender Patrick Roy is widely viewed as "the father of the butterfly style" of goaltending, in which the goalie drops to his knees to block shots. However, Roy did not invent the butterfly technique; he only popularized its use. *See* Michael Farber, *Career for the Ages*, SI.com (May 28, 2003), *at* http://www.cnnsi.com/inside_game/michael_farber/index.html ("Roy did not invent the butterfly, but he made it the style that swept the game.").

118. *See, e.g.*, Smith, *supra* note 8, at 1075–87.

methods used to prepare for it. For athletic competition methods, Congress should confirm the PTO's readiness to grant patents by expressly establishing these techniques as within patent subject matter coverage. However, Congress should reduce the rights afforded an inventor of this type of technique by exempting from infringement anyone using or making the patented invention in sports competition or in preparation for such competition[119] or anyone encouraging or teaching such use.[120] By maintaining infringement liability for anyone other than the inventor who sells or attempts to sell the patented invention, this reform ensures that only the inventor profits directly from the patented innovation but makes the invention widely available. Inventors could still receive income from manufacturers seeking to sell items specially adapted to their technique.[121] Congress adopted similar changes to patent coverage based on public policy concerns for supplying information to federal agencies such as the FDA[122] and for making surgical innovations readily available.[123] Hence, this change is within the bounds of Congressional precedent and recognizes innovation in athletic methods used in competition, but prevents pernicious effects from enforcement of exclusive rights against competitors.

For training and preparatory techniques, Congress should confirm that these inventions can be patented and should maintain the current patent system of requirements and entitlements. However, Congress should pass legislation exempting governing organizations in sports from antitrust liability if these organizations prevent a player or team from using a patented training technique unless that technique is available to other players or teams on reasonably similar terms. This approach retains commercial incentives for innovation that are important to entities that are not direct participants in sports. It eliminates the risk to competition from exclusive use of an advantageous training technique by ensuring a level playing field: either all players and

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119. This alteration effectively removes "makes" and "uses" from the exclusive rights protected against infringement by 35 U.S.C. § 271(a) (2000).

120. This change protects coaches, trainers, and managers from liability for inducing infringement or contributory infringement under 35 U.S.C. § 271(b). *Id.* § 271(b).

121. *See id.* § 271(c) (establishing contributory infringement liability for manufacturers who sell or import components "especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use"). For example, an inventor who patented a new golf putting method could receive income from a manufacturer producing a putter specially adapted to the method, because without a license the manufacturer would be liable for contributory infringement.

122. *See id.* § 271(e)(1) (exempting from liability anyone making, using, selling, or importing a patented invention if the sole uses are "reasonably related to the development and submission of information under a Federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products").

123. *See id.* § 287(c).

teams enjoy reasonably similar market access to this new product, or none do.[124]

This approach, however, might allow a league to hold or license exclusively a training method patent, blocking other competing organizations in its sport. To address this risk, Congress should add a provision to the proposed antitrust reform bill establishing a presumption of unreasonable restraint of trade in two situations. First, a league holding a training method patent would violate antitrust laws if it refuses to license it on commercially reasonable terms.[125] Second, a league holding an exclusive lease on a patented training method would violate antitrust laws if courts find that the method is essential to competition.[126] These presumptions prevent a league from locking up a valuable training technique against competitors in the same sport or competing sports.[127]

Next, organizing bodies and leagues should modify their governing rules. Leagues should ban players or teams from using patented training techniques unless the patent-holding entity makes the techniques available on commercially similar terms to all other teams or players in the league.[128] This provision would tend to reduce the price of a license greatly — probably to zero — because a player could not use the technique unless they granted a license to all other competitors. Hence, each competing player or team could "hold out" and prevent the patent-holding player from using the technique unless she

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124. This reform also avoids tactics that evade the inside/outside distinction between league participants and outside entities. For example, if NFL rules prohibited ownership and use of training technique patents, a team that invented a valuable new technique could transfer the patent to an outside corporation with a "grantback" clause giving the team an exclusive license in the invention. *Cf.* Sandomir, *supra* note 39 (describing a similar tactic used by the Dallas Cowboys with respect to trademark rights).

125. Defining "commercially reasonable terms" might invite litigation, but regulators could assess a range of prices based on similar market items (ones with relatively high cross-elasticity of demand).

126. This rule prevents a team from transferring a training method patent to a related third party in exchange for an exclusive license to it, as the Cowboys and Yankees did to evade their respective leagues' joint merchandising arrangements. See *supra* notes 38–42 and accompanying text.

127. If a non-league entity holds the patent, the risk to competition from an exclusive license is reduced by market pressures. But as previously discussed, winner-take-all markets may have sufficiently skewed reward structures to permit lock-up by a league. Hence, this provision is a prudent safeguard.

128. This approach is necessary in winner-take-all markets like professional sports. Theoretically, a firm with a patented training advance would maximize profits by licensing the invention to more than one team because no single team could afford to compensate that firm for giving up all other sources of revenue from that team's league. However, in winner-take-all markets, the advance may be a sufficient competitive advantage that one player or team would pay more than the revenue available from broad licensing based on the potential to capture disproportionate shares of revenues and endorsements.

reduced the license cost.[129] Exempt from antitrust liability, leagues could prevent competitive harm from training method patents.

In addition, leagues should recapitulate Congressional reforms in their rules. Players and teams should be prohibited from using patented techniques in competition unless they license their invention to all other competitors or to the league, which would have the power under the assignment contract to grant non-exclusive licenses. Jurisdictional considerations necessitate this private law component, which offers an advantage that public law reform lacks. MLB, the NBA, and the NHL include Canadian teams and conduct games (even if only in exhibition or pre-season) in countries such as Japan and Mexico. Changes to U.S. patent law only affect actions within American borders, so such changes could not impact games played in other countries. However, changes in league rules and governance would affect competitors regardless of geographic location. Consequently, private law strategies that seem redundant might in fact be essential.[130]

This combined approach eliminates disadvantageous effects on competition, recognizes innovation in competitive methods, and provides incentives to invent training methods. It also increases certainty for the PTO and federal courts in resolving disputes over interpreting patent and antitrust doctrine in the sports context. However, Congress generally modifies antitrust and intellectual property laws only when it perceives a strong need to do so. Until sports patents create anticompetitive effects, or until sports leagues make a compelling case for the need to prevent this problem before it occurs, Congress is not likely to act.

Thus, sports organizations need to act — to encourage Congress to refine patent and antitrust law in the context of sports, and to create complementary private law. A completely private law solution could leave leagues exposed to antitrust suits. Nevertheless, if Congress fails to reform public law, the optimal internal league rules to deal with patents would mirror the proposed legislation. Leagues would prohibit

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129. In theory, competing players or teams might hold out for a negative license fee — in other words, the patent holder would have to compensate them to accept a license in order to use the invention. However, if the invention has positive value in competition, market pressures will eliminate this possibility. Ultimately, each player or team would like to "hold out": as the last to accept a license, one could extract a fee from the patentee just less than the value of the invention's use to the patentee. In the absence of perfect information about who has already obtained a patent, though, competitive pressures force each competitor to engage in bidding for license rights that would drive this negative license fee to zero. This effect occurs because as competitors increasingly accept licenses, the holdout is at an increasing disadvantage since her competition may use the invention, but she and the patentee may not. In any case, if this game theory approach failed, leagues could simply modify the rules to require a minimal-cost license to all participants if the player or team wished to use the invention.

130. As discussed above, the need for a combined approach would depend in large part on the availability and breadth of patents in countries where professional sports hold contests. See *supra* text accompanying note 70.

the use of a patented method unless the patentee licensed it to all other league participants (for competitive methods), or unless it was generally available (for training methods).

In the absence of antitrust reform, though, a sports league or organizing body risks a charge that its changes harm market competition when it modifies its rules. Sports patents create an extraordinarily complicated situation for antitrust regulation by blending two difficult areas: the tension between patent law and antitrust,[131] and the unique characteristics of professional sports leagues.[132]

If a league created rules preventing a player or team from employing a patented technique unless it licensed or assigned the invention, that patent holder might bring a claim under section 1 (claiming that the league's teams seek to monopolize trade) or section 2 (claiming that there is a conspiracy to restrain trade) of the Sherman Act.[133] Courts would likely analyze such restrictions under antitrust "rule of reason" analysis rather than a per se approach. The U.S. Supreme Court established the rule of reason approach in *Silver v. New York Stock Exchange*;[134] the analysis examines:

> (1) whether the collective action is intended to accomplish an end consistent with the policy justifying self-regulation; (2) whether the action is reasonably related to that goal; (3) whether such action is no more extensive than necessary; and (4) whether the association provides procedural safeguards which assure that the restraint is not arbitrary and which furnish a basis for judicial review.[135]

A ban with an exception for inventions licensed to other competitors seems to meet the *Silver* test provided it includes procedural protections such as notice and comment provisions. The policy justification for the qualified ban is the need to protect competitive balance in the sport, and the ban clearly relates reasonably to that goal since the patented methods constitute the threat to balance. Given the competitive threat posed by patented methods, requiring licensing to avoid preclusion of a competitive advance seems the most narrowly

131. *See* Kaplow, *supra* note 56, at 1816–20.

132. *See* Los Angeles Mem'l Coliseum Comm'n v. Nat'l Football League, 726 F.2d 1381, 1394 (9th Cir. 1984).

133. *See* 15 U.S.C. § 1 (2000).

134. 373 U.S. 341 (1963).

135. Gunter Harz Sports, Inc. v. U.S. Tennis Ass'n, Inc., 511 F. Supp. 1103, 1116 (D. Ne. 1981) (citing other cases applying the *Silver* standard to "professional and amateur sports"), *aff'd*, 665 F.2d 222, 223 (8th Cir. 1981) (affirming both the district court's judgment and its rule of reason analysis, and stating that "[a]ntitrust regulation is proper when, as here, an association wields enormous economic clout by virtue of its exclusive control over the conduct of a major sport").

tailored solution and should be permissible under the *Silver* rule of reason test.

Courts would likely approach rules on patented methods as they do regulations governing or prohibiting playing equipment. For example, when the United States Tennis Association ("USTA") followed the International Tennis Federation and banned a new type of racket that produced tremendous topspin, the racket's manufacturer sued, alleging violation of section 1 of the Sherman Act.[136] The district court found that section 1 applied to the non-profit USTA,[137] but found under the rule of reason that the ban was "was intended to accomplish the legitimate goals of preserving the essential character and integrity of the game of tennis as it had always been played, and preserving competition by attempting to conduct the game in an orderly fashion."[138] In dismissing the lawsuit,[139] the court cited concerns that the new rackets would alter greatly the character of the game and how it is played.[140] Both the district court and the Eighth Circuit, which affirmed the dismissal, emphasized the need for procedural safeguards in such rulemaking.

Clearly, though, leagues must follow their own rulemaking procedures and must justify restraints to avoid antitrust liability and impose such restraints successfully. When the PGA Tour banned iron clubs using a new surface groove pattern, nine golfers who used the new irons and the clubs' manufacturer sued to enjoin the ban under sections 1 and 2 of the Sherman Act.[141] The district court granted an injunction against enforcement of the ban by the Tour, finding that the Tour likely violated its by-laws in adopting the measure[142] and that whether the new irons changed the character of the game posed a serious question of fact.[143] The Tour settled and dropped the ban before trial of the merits of its case.[144]

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136. *See Gunter Harz Sports*, 511 F. Supp. at 1107–13; *accord* STP Corp. v. U.S. Auto Club, 286 F. Supp. 146, 151 (S.D. Ind. 1968) (finding no antitrust violation under rule of reason analysis when the Auto Club set limits on the size of turbine engines to ensure competitive parity with piston engines and stating that the "quickest way to bring about the demise of racing would be to permit a situation that developed for one car with superior qualities or such superior capabilities as to eliminate competition," which would be "like allowing one basketball team to have a large hoop at one end of the court and a small regulation size basketball hoop at the other end for the other team").

137. *See Gunter Harz Sports*, 511 F. Supp. at 1115.

138. *Id.* at 1117.

139. *See id*. at 1124.

140. *See id*. at 1120–21.

141. Gilder v. PGA Tour, Inc., 727 F. Supp. 1333, 1333–35 (D. Ariz. 1989) (granting a temporary injunction preventing the Tour from enforcing the ban), *aff'd*, 936 F.2d 417, 424 (9th Cir. 1991) (declining to decide whether per se or rule of reason analysis should apply to the antitrust suit).

142. *Gilder*, 727 F. Supp. at 1336–37.

143. *Id.* at 1335.

144. *See* George White, *PGA Tour, Karsten Settle Suit: Tour Agrees to Drop Ban on Clubs With Box Grooves*, ORLANDO SENTINEL TRIB., Apr. 15, 1993, at D1.

Patented methods pose a stronger challenge to the character of a sport than new equipment: All participants generally could use new clubs, rackets, or motors. Without patent law reform, only a patent-holder or licensee could employ a new technique, threatening competitive balance. Previous cases about new equipment in individual sports suggest that courts would apply rule of reason analysis to league regulations and would examine closely whether procedural requirements for adopting rules exist and are followed.[145]

While internal limits on patents likely pass antitrust muster, a refusal by a league to license inventions to competing leagues seems at greater risk. Each of the four major professional sports currently enjoys an effective monopoly in the United States.[146] However, competing leagues arise at times, such as the XFL in football, the American Basketball League in women's basketball, and the World Hockey Association in ice hockey. Leagues at other levels of a sport may also compete partially with major league sports: Continental Basketball Association and NCAA basketball games may have some cross-elasticity of demand with NBA games. In addition, professional sports with overlapping schedules, such as the NBA and NHL, may compete to a degree. Thus, a league that refuses to license a patented competitive technique to another league in the same sport, or a patented training technique to another league in any sport, might reduce competition.

For example, imagine that MLB holds a patent on a new type of breaking pitch that is very effective in causing batters to swing and miss. Baseball permits any player competing in one of its games, or on a minor league team affiliated with one of its clubs, to use this pitch, but refuses to license or allow other players to employ it.[147] Non-MLB players, teams, and organizations (such as the NCAA or the independent Northeast League) could bring a claim under either § 1 or § 2. The court deciding this suit would have to consider two issues. First, is MLB a single entity, or is it actually comprised of thirty teams acting in concert? This analysis would be important for a section 1 claim, which requires at least two entities to agree in a way that restrains trade; single entities are subject only to restraint under § 2.[148] Second, is exclusive licensing of a patent only to teams and players within a league an antitrust violation?

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145. *See, e.g.*, *Gilder*, 936 F.2d at 424; *Gunter Harz Sports*, 511 F. Supp. at 1121–22 (finding adequate procedural protections in the ITF's notice and comment procedure on the new rule).

146. In addition, Major League Soccer, the Women's National Basketball Association, the PGA Tour, the Women's Tennis Association Tour, the Association of Tennis Professionals, and Major League Lacrosse enjoy effective monopolies in their sports.

147. Note that this license is limited both by licensee, because only players in MLB or its minor league system may use the pitch, and by location, because licensees may use the pitch only in MLB's games or affiliated minor league contests.

148. *See* Copperweld Corp. v. Independence Tube Corp., 467 U.S. 752, 767–68 (1984).

First, whether a league is a single entity or an agglomeration of teams is not clear under antitrust law and depends on the market under analysis.[149] However, courts probably would not need to resolve this tension, since the real issue is whether the refusal to share patent rights with competitors violates antitrust laws. If the market consists of major professional contests in the sport, leagues likely enjoy a monopoly, and patent licensing within the league enhances competition. If the market is defined as "revenue-generating contests within the sport," or if a new league competed in the "major professional sports contest" market, characterizing leagues as single entities or coalitions is probably unnecessary to adjudicating an antitrust claim. Any harm to market competition occurs regardless of whether a group of teams engages in horizontal restrictions through cross-licensing or whether the league engages in a vertical restriction through exclusive licensing to the teams that distribute its product.[150] While the single-entity issue controls whether § 1 or § 2 applies to a league, a court does not need to resolve the issue to weigh the antitrust impact of an exclusive licensing arrangement.

Second, exercising patent rights by refusal to license an invention does not violate antitrust law as long as the patent was lawfully obtained.[151] Courts have held that the need to maintain incentives for useful innovation through patent protection justifies seemingly anticompetitive behavior by patentees, such as unreasonable refusal to license the patent.[152] Courts generally treat patent licensing as an exception to antitrust prohibitions,[153] following the statutory language

149. *See* Topps Chewing Gum, Inc. v. Major League Baseball Players Ass'n, 641 F. Supp. 1179, 1189 (S.D.N.Y. 1986) ("[The] first issue in any rule of reason analysis is to define the relevant market in which the competitive impact of the defendant's actions are [sic] to be examined."); *see also* Los Angeles Mem'l Coliseum Comm'n v. Nat'l Football League, 726 F.2d 1381, 1391–94 (9th Cir. 1984); Nat'l Football League v. N. Am. Soccer League, 459 U.S. 1074, 1075 (1982) (Rehnquist, J., dissenting from denial of cert.).

150. *See Los Angeles Mem'l Coliseum*, 726 F.2d at 1391–94 (finding that the "NFL's structure has both horizontal and vertical attributes" and that "[c]ollective action in areas such as League divisions, scheduling and rules must be allowed" but that "the exceptional nature of the industry makes precise market definition especially difficult" because "the market is determined by how one defines the entity").

151. *See, e.g.*, Data General Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1186 (1st Cir. 1994) (stating that in the "conflict between the patent laws and the antitrust laws," courts treat "the former as creating an implied exception to the latter" and noting that a firm may use legitimate patent rights to maintain monopoly power). Exceptions to this rule may occur where the patentee has obtained the patent through fraud on the PTO or other unlawful means. *See, e.g.*, SCM Corp. v. Xerox Corp., 645 F.2d 1195, 1208–09 (2d Cir. 1981). Additionally, the discussion here assumes that competitors to a league asserting a patent would not have a colorable tying claim; such a claim would raise distinct antitrust concerns.

152. *See SCM Corp.*, 645 F.2d at 1209 (stating that antitrust liability in this context would "severely trample upon the incentives provided by our patent laws and thus undermine the entire patent system").

153. *See, e.g.*, *In re* Indep. Servs. Orgs. Antitrust Litig., 989 F. Supp. 1131, 1134 (D. Kan. 1997), *aff'd*, CSU, L.L.C. v. Xerox Corp., 203 F.3d 1322 (Fed. Cir. 2000) (holding that "where a patent or copyright has been lawfully acquired, subsequent conduct permissi-

that "[n]o patent owner . . . shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of . . . refus[al] to license or use any rights to the patent."[154] In addition, it seems unlikely that a sports patent would create an essential facility[155] that the league would have to share with competitors.[156] Courts in the past have not, for various reasons, applied essential facilities doctrine to intellectual property.[157]

However, exclusive licensing (rather than refusal to license) of the patented invention by the league to its member teams might create antitrust liability.[158] The U.S. Supreme Court stated that patents "grant no privilege to their owners of organizing the use of those patents to monopolize an industry through price control, through royalties for the patents drawn from patent-free industry products and through regulation of distribution."[159] While a patentee generally enjoys freedom to refuse to license, granting multiple licenses that may limit competition incurs rule of reason scrutiny.[160] The outcome would depend both on the definition of the market in which the league operates and on the licensing's effects in that market. In our new breaking pitch example, if MLB teams compete with teams such as the Brockton Rox of the Northeast League, or even with college teams such as

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ble under the patent or copyright laws cannot give rise to any liability under the antitrust laws"). *But see* Image Tech. Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1208–12 (9th Cir. 1997) (creating only a rebuttable justification for failure to license an invention when the patentee enjoys monopoly power in a market).

154. 35 U.S.C. § 271(d)(4) (2000).

155. *See* United States v. Terminal R.R. Ass'n, 224 U.S. 383, 402 (1912) (defining a railroad switching yard as an essential facility that must be shared).

156. *Cf.* Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 286 (2d Cir. 1979) (refusing to force Kodak to disclose future product specifications to Berkey because they are not essential to the photofinishing industry).

157. *See, e.g.*, Intergraph Corp. v. Intel Corp., 195 F.3d 1346, 1357 (Fed. Cir. 1999) (rejecting the district court's finding that Intel's Pentium II chip architecture was an essential facility).

158. *See* U.S. Dep't of Justice & Fed. Trade Comm'n, *Antitrust Guidelines for the Licensing of Intellectual Property*, Apr. 6, 1995, *at* http://www.usdoj.gov/atr/public/guidelines/ipguide.htm [hereinafter *Antitrust Guidelines*]. Exclusive intellectual property licensing "may raise antitrust concerns only if the licensees themselves, or the licensor and its licensees, are in a horizontal relationship," *id.* at § 4.1.2, and that horizontal licensing arrangements are typically reviewed under the "rule of reason" standard, *id.* at § 5.1. Hence, it seems likely that the Antitrust Division of the Department of Justice and the Federal Trade Commission would evaluate the patent licensing scheme based on its market effects. Defining the relevant market is critical to this inquiry.

159. United States v. U.S. Gypsum Co., 333 U.S. 364, 400 (1948). The court looked at the industry-wide licensing by the patentee in finding an attempt to monopolize the market. *See id*. Thus, the definition of the market would become important for professional sports leagues, which already hold a monopoly in their sport under some constructions of the relevant market.

160. *See id.* at 400–01 (stating that "[w]e apply the 'rule of reason' . . . to efforts to monopolize through patents as well as in non-patent fields" and finding violations of sections 1 and 2 of the Sherman Act).

the University of Texas Longhorns, antitrust concerns become increasingly relevant:

> [A]ntitrust concerns may arise when a licensing arrangement harms competition among entities that would have been actual or likely potential competitors in a relevant market in the absence of the license (entities in a "horizontal relationship"). A restraint in a licensing arrangement may harm such competition, for example, if it facilitates market division or price-fixing. In addition, license restrictions with respect to one market may harm such competition in another market by anticompetitively foreclosing access to, or significantly raising the price of, an important input, or by facilitating coordination to increase price or reduce output.[161]

If the patented invention counts as an "important input" that would affect price or reduce output — by allowing MLB teams to increase prices because they can use the new breaking pitch, or by reducing the ability of other teams to compete or produce games because they are foreclosed from doing so — a court might find that MLB's licensing violated antitrust prohibitions.[162]

Leagues licensing patented inventions exclusively to their teams probably face rule of reason antitrust scrutiny. Whether these arrangements violate antitrust laws depends both on the market in which a league operates and the effects of the licensing in that market.

VI. CONCLUSION

Sports techniques protected by patents, whether methods or moves used in competition or techniques used in training and preparation, confront professional sports with real risk. Sports attract spectators and fans by providing unceasing competition among skilled, dedicated athletes. Leagues constantly strive to maintain competitive uncertainty with rules that promote competition by muting resource disparities, such as player compensation limits, and by prohibiting certain technical advances, such as bans on anabolic steroids. Fans watch and follow sports not only to see great athletes perform, but to

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161. *Antitrust Guidelines*, *supra* note 158, at § 3.1.

162. *Cf.* Phil. World Hockey Club v. Phil. Hockey Club, 351 F. Supp. 462, 509 (E.D. Pa. 1972) (granting an injunction barring the NHL from seeking injunctions under state law to prevent its players from moving to the new World Hockey Association ("WHA") and comparing the availability of skilled players for the WHA's survival to the supply of iron ore needed to run a steel mill). If players are a critical input for sports competition under antitrust law, it seems plausible that competitive techniques would be as well.

see how these performances translate into victory or defeat. As the NFL has found, uncertainty proves attractive, since more teams have an opportunity not only to win games, but to win championships.[163]

Patents threaten uncertainty by imposing limits on competition. A player or team with a patented advance gains a unilateral advantage over other competitors, who cannot make use of the innovation without the patentee's permission. Players, teams, and other sports-related inventors have strong incentives to protect new techniques with patents. The winner-take-all nature of professional sports creates opportunities for consistently successful competitors to reap enormous benefits both on absolute and relative scales. Gaining an advantage foreclosed to others could prove extremely lucrative for competitors, who might enjoy a lasting advantage. This decreased uncertainty would reward the inventor with a greater probability of success but would harm organized competition in that sport (or sports league) by making outcomes more predictable and less interesting. Thus, competitors have interests and incentives adverse to the sport in which they participate.

Patents on sports techniques are a modern creation made possible by the broadening of patent subject matter coverage under legislation, permissive PTO attitudes, and court decisions. Sports methods must satisfy the standard requirements for patentability, including novelty, utility, non-obviousness, and disclosure. The widespread media coverage of sports will improve the PTO's ability to determine prior art coverage for purported inventions. More effective PTO screening will reduce the number of innovations capable of patenting, so that each patented invention will represent a greater advance in its sport. Consequently, each innovation will pose a greater potential threat to competition and increase the opportunity for rent capture by patentees.

Sports competition is governed by public law derived from legislative statutes, court decisions, and administrative regulations, and by private law controlled by the rules of governing and organizing sports bodies. Both levels of law should respond to the risks from sports patents with reforms. Congress should pass legislation limiting protection for competitive sports methods and permitting leagues to condition use of training techniques on their general market availability to competitors. Antitrust law should prevent leagues from increasing their popularity at the expense of competing entertainment products through patents. Governing bodies should require patentees to license inventions to all competing athletes or teams, or force them to forgo use of their innovations in league-related activities. An optimal solution would combine public and private law to prevent leagues from incurring antitrust liability while trying to protect competition, ensure

163. *See* Richard Sandomir, *Parity in the N.F.L. Is Good For Ratings*, N.Y. TIMES, Dec. 17, 2002, at D4 (quoting league and television executives discussing the benefits of parity).

rule consistency across national boundaries, and prevent leagues from locking up advances against other participants in the sport.

Patents reward useful inventive effort, innovation, and creativity with remuneration and acclaim, but provide these rewards by limiting competition. This effect is tolerated because it is a necessary evil — a detriment accepted as a consequence of spurring innovation. In competitive sports, though, sufficient incentives for innovation exist to make this harm unacceptable. Organized sports have not yet had to grapple with this problem, but they will in the future, because of existing potential, incentive, encouragement, and expertise for sports patents exist today. Even if leagues cannot convince bodies such as Congress to undertake reform, they should act on their own before teams or players holding patents threaten to block changes. Controls on the use of patented techniques in sports will ensure that talent, effort, and creativity remain the determinative elements of athletic success.