March 24, 2010

Via Electronic Submission to *intellectualproperty@omb.eop.gov*

Ms. Victoria A. Espinel
U. S. Intellectual Property Enforcement Coordinator
Office of Management and Budget
725 17th Street N.W.
Washington, D.C. 20503

Re: Request for Comments on the Coordination and Strategic Planning of the Federal Effort Against Intellectual Property Infringement

Dear Ms. Espinel:

On behalf of the Sports Coalition, we respectfully submit this response to your request for comments regarding the Joint Strategic Plan for enforcement against intellectual property infringement that appeared in the Federal Register. 75 Fed. Reg. 8137 (Feb. 23, 2010).

The Sports Coalition consists of the following amateur and professional sports leagues, associations and related entities: Major League Baseball; Major League Baseball Advanced Media, L.P. (Major League Baseball's Internet and interactive media company); National Basketball Association; National Collegiate Athletic Association; National Football League; and NHL Enterprises, L.P. (the licensing arm of the National Hockey League).

In formulating the Joint Strategic Plan, and in response to Supplemental Comment Topic 14, IPEC should identify the growing problem of Internet piracy of U.S. live television programming, including live U.S. sports telecasts, as one which must be comprehensively and proactively addressed by the U.S. Government.

Pursuant to existing treaties, existing laws, and privately negotiated contracts, sports organizations, including members of the Sports Coalition, typically own all rights, including intellectual property rights such as copyrights and related rights, in telecasts of their live sports events. They license the rights to telecasts and retransmit telecasts of thousands of live sports events, as well as highlights of those events, each year. They derive significant revenue from and make significant investments in live telecast distribution at the local, national and international levels, and across various media, including over-the-air, cable and satellite television and the Internet, including wireless devices. Third party telecast rights holders, including many leading television networks

in the United States, similarly derive significant revenue from and make significant investments in these commercial relationships.

Internet piracy of live sports telecasts is a growing problem, occurring primarily by means of unicast streaming, streaming over peer-to-peer ("SOP") networks, and live streaming user-generated content sites sometimes called "lifecasting" sites. Whereas unicast streaming has been the primary way that video content has been distributed on the Internet to date, SOP and lifecasting have emerged as the dominant methods for transmitting pirated live television programming of all types, including live sports telecasts. This type of piracy is copyright infringement under U.S. copyright law.[1]

Internet piracy of live sports telecasts is not only a growing problem, but also a global one, often involving bad actors in more than one nation. Pirate services and those complicit with them are believed to be located in many nations including Canada, Israel, the Netherlands, the People's Republic of China, the Republic of Korea, the Russian Federation, Sweden, the United Kingdom, and the United States.[2] The Office of the United States Trade Representative has identified this matter as an international intellectual property rights protection and enforcement issue in its 2008 and 2009 Special 301 Reports to Congress.[3]

Sports Coalition members are devoting significant resources to curb this emerging – and particularly egregious – variant of digital piracy. Important outreach and rights enforcement initiatives are occurring. However, because of the complexity of the problem, these initiatives must be supported by public sector action. We therefore recommend that resolution of this problem be a stated goal of U.S. Government intellectual property rights protection and enforcement policy.

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[1] *See Twentieth Century Fox Film Corp. v. iCraveTV*, 2000 U.S. Dist. LEXIS 11670 (W.D. Pa. Feb. 8, 2000); *cf.* Register of Copyrights, Satellite Home Viewer Extension and Reauthorization Act Section 109 Report at p. xii, 181-189 (June 2008), *available at* http://www.copyright.gov/reports/section109-final-report.pdf (retransmissions of television programming over the Internet require licenses from copyright owners).

[2] *See* Sports Coalition Comments, 2010 Special 301 Review: Identification of Countries Under Section 182 of the Trade Act of 1974, USTR-2010-0003-0271.1, at 2 (Feb. 18, 2010) *available at* http://www.regulations.gov/search/Regs/home.html#documentDetail?R=0900006480aa6e8b [hereinafter Sports Coalition Letter].

[3] Office of U.S. Trade Rep., 2008 Special 301 Report at 10 *available at* http://www.ustr.gov/about-us/press-office/reports-and-publications/archives/2008/2008-special-301-report ("[u]nauthorized retransmission of live sports telecasts over the Internet is reportedly becoming an increasing problem internationally, particularly in China"); USTR, *supra* note 8, at 5 ("[u]nauthorized retransmission of live sports telecasts over the Internet continues to be a problem in many countries, particularly in China").

In considering this matter, IPEC should be aware of two recent developments which are significant sources of information from which IPEC can draw:

First, on December 16, 2009, the U.S. House of Representatives Committee on the Judiciary Committee held a hearing entitled, "Piracy of Live Sports Broadcasting Over the Internet" (the "Hearing").[4] Attached as Appendix A is a copy of the written statements to the Committee submitted by Major League Baseball/MLB Advanced Media, National Basketball Association, National Football League and United States Tennis Association.

At the Hearing, Committee members voiced concerns about the threat this problem poses to the U.S. economy. As reported by the Bureau of National Affairs,[5] statements at the Hearing included the following:

- "The illegal online streaming of live sports broadcasts is an emerging form of piracy that negatively impacts the economy and hurts consumers, Rep. Hank C. Johnson Jr (D-Ga.) said…." (p. 273)

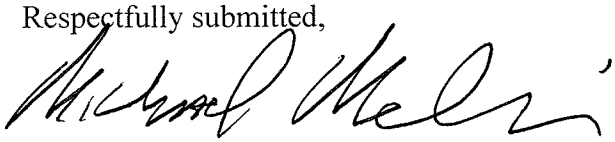
- "The use of P2P networks for live piracy has become a significant threat for the sports broadcast industry …. It is clear we need to assess the state of the law and technology and to begin consideration of the steps that ought to be taken, domestically and internationally, to respond to this new and damaging form of piracy," [Ranking Committee member Rep. Lamar S. Smith (R-Texas)] said." (Id.)

Second, the Organisation for Economic Cooperation and Development ("OECD") published a report entitled, *Piracy of Digital Content* (the "OECD Report").[6] The OECD Report represents Phase II of OECD's three-phase project examining the Economic Impacts of Counterfeiting and Piracy. Chapter 4 of the OECD Report is a case study about digital piracy affecting sports rights owners entitled, "*Case Study: The Sports Rights Owners Sector*," (the "Case Study"), a copy of which is attached as Appendix B. Several Sports Coalition members provided OECD with information about their experiences with respect to the piracy of their live sports telecasts on the Internet, and the Case Study includes specific industry examples.

[4] http://judiciary.house.gov/hearings/hear_091216.html.
[5] N. Pollard, "Internet Piracy of Live Sports a "Significant Threat for Sports Broadcasting Industry," *Bureau of National Affairs Patent Trademark and Copyright Journal*, January 15, 2010 at pp. 273-74.
[6] http://browse.oecdbookshop.org/oecd/pdfs/browseit/9309061E.PDF.

The Sports Coalition looks forward to working together with you to address these important issues.

Respectfully submitted,



Michael J. Mellis
Senior Vice President and
General Counsel

cc: Scott Bearby, Esq. – National Collegiate Athletic Association
Anastasia Danias, Esq. – National Football League
Ayala Deutsch, Esq. – National Basketball Association
Gary Gertzog, Esq. – National Football League
Michael Gold, Esq. – NHL Enterprises
Nikki Hart, Esq. – National Football League
Paul Jackson – National Football League
Kelley Lynch, Esq. – NHL Enterprises
Thomas Ostertag, Esq. – Major League Baseball
Thomas Prochnow, Esq. – NHL Enterprises
Mitchell Schwartz, Esq. – MLB Advanced Media

Enclosures

Appendix A

STATEMENT OF MICHAEL J. MELLIS,
SENIOR VICE PRESIDENT AND GENERAL COUNSEL, MLB ADVANCED MEDIA
BEFORE THE COMMITTEE ON THE JUDICIARY,
UNITED STATES HOUSE OF REPRESENTATIVES, 111TH CONGRESS, 1ST SESSION
DECEMBER 16, 2009

Hearing on Piracy of Live Sports Broadcasting Over the Internet

Chairman Conyers, Ranking Member Smith and distinguished members of the Committee, on behalf of Major League Baseball, I would like to thank you for the privilege of addressing you this morning. My name is Mike Mellis and I am Senior Vice President and General Counsel of MLB Advanced Media, which is MLB's Internet and interactive media company.

Under the leadership of Commissioner Allan H. Selig, MLB has developed highly successful, diverse and innovative sports media businesses. On television, game telecasts are distributed nationally through DirecTV, ESPN, Fox, inDemand, the MLB Network, TBS and Verizon; locally through broadcast television stations and regional sports networks; and internationally, to over 200 countries and territories and the U.S. Armed Forces overseas. On the Internet, MLB has also been a pioneer in distributing live sports. MLB.com's first live game webcast occurred in 2002, an innovation to better serve our fans in the pioneering tradition of the first radio broadcast of a game in 1921 and the first television broadcast in 1939. Today, MLB.TV is the world's most successful and comprehensive live video service on the Internet, distributing thousands of games each season to a global audience of baseball fans on personal computers and iPhones.

Clearly, rights owners like MLB can be adversely impacted by telecast piracy. And right now there is an emerging type: unauthorized streaming over the Internet of live television programming of all types, including live sports telecasts and related programming.[1]

The process starts by plugging a cable or satellite television line into a personal computer connected to the Internet. A TV tuner card or stick with accompanying software allows the computer to capture the television signals and function like a TV. These cards and sticks cost less than $100 each and are widely available. Next, with the help of a free streaming over peer-to-peer service[2] ("p2p") software download or other enabling technology, the signals are uploaded onto the public Internet for worldwide viewing.

The number of sites and services involved in this phenomenon is significant and has grown rapidly.[3] They are believed to be located in many nations including the People's Republic of China, the Republic of Korea, Sweden and the United States.[4] Many are open doors,

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[1] *See e.g.*, Organisation for Economic Co-operation and Development, *Case Study: The Sports Rights Owners Sector, in* Piracy of Digital Content at 87-115 (2009) [hereinafter OECD]; Michael J. Mellis, *Internet Piracy of Live Sports Telecasts,* 18 Marq. Sports L. Rev. 259-284 (2008) [hereinafter Mellis].

[2] Streaming over peer-to-peer networks involves media streams being passed (in real-time) through the Internet among network participants, rather than from a central server to an end user. *See* OECD, *supra* note 1 at 29 ("…recent technological developments also permit P2P networks to also be used for the unauthorised distribution of live broadcasts of sports events, which has become a significant threat for the sports broadcasting industry….").

[3] *See* OECD, *supra* note 1, at 106-112 for specific industry examples about the number of sites and services involved in the piracy.

[4] MLB Advanced Media Comments, Special 301 Review: Identification of Countries Under Section 182 of the Trade Act of 1974, USTR-2009-0001-0037, at 2 (Feb. 19, 2009) *available at* http://www.regulations.gov/search/Regs/home.html#documentDetail?R=09000064808bc81b [hereinafter MLB Advanced Media Comments]. These comments were submitted on behalf of the Sports Coalition, which consists of the following amateur and professional sports leagues, associations and related entities: MLB; MLB Advanced Media; National Basketball Association; National Collegiate Athletic Association; National Football League; and NHL Enterprises, L.P. (the licensing arm of the National Hockey League).

permitting any type of television programming to be streamed live, persistently and globally, without authorization from copyright owners. Some stream dozens of television networks at a time. For example, one industry association recently described pirate services based in China as responsible for streaming "entire bouquets of pay-TV channels" including the Cartoon Network, CNN, Discovery Channel, Disney Channel, ESPN and HBO.[5] Many parse out programming into genre or game-specific "channels."

This poses a threat to the global televised media sector. Although there is much that remains unknown about this problem, particularly with respect to its offshore aspects, it is clear that on an annual basis, tens of thousands of hours of live television programming from networks around the world are being pirated. Included is significant piracy of live sports telecasts and related programming of the world's premier sports organizations. For example, earlier this year, MLB, NBA, NCAA, NFL and NHL informed the Office of the U.S. Trade Representative ("USTR") that a hub of online television piracy called "TVAnts," based in China, was pirating nearly every one of their live event telecasts and profiting from it by selling advertising on the TVAnts media player.[6]

In our rights enforcement efforts throughout the past several years, during which we have identified and logged thousands of piracy incidents, the dominant pattern we have seen is piracy occurring through p2p services based in China, a nation on the USTR's "Priority Watch List" because of its intellectual property rights protection and enforcement problems.[7] Late last year,

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[5] Cable & Satellite Broadcasting Association of Asia Comments, Special 301 Review: Identification of Countries Under Section 182 of the Trade Act of 1974, USTR-2009-0001-0013.1 (Feb. 17, 2009) *available at* http://www.regulations.gov/search/Regs/home.html#documentDetail?R=090000648085bcea.

[6] MLB Advanced Media Comments, *supra* note 4, at 3-4.

[7] Office of U.S. Trade Rep., 2009 Special 301 Report at 13-15 (Apr. 30, 2009) *available at* http://www.ustr.gov/about-us/press-office/reports-and-publications/2009/2009-special-301-report [hereinafter USTR] ("[o]f particular concern is the rise of Internet piracy in China, especially given its emergence as a leading nation in terms of the number of Internet, broadband

we observed a newer pattern of piracy involving live streaming user-generated content sites, sometimes called "lifecasting" sites, most of which are located in the U.S.

We have also seen that when operators of sites and services decide to take affirmative steps to prevent or block unauthorized streaming, the piracy can be substantially mitigated. These steps can include: clear warnings against service misuse; account termination for violators; prevention through screening (including the possibility of real-time content filtering); and cooperation with copyright owners, including immediate take-down of unauthorized streams upon notice.

Our copyright law is clear: the piracy is copyright infringement.[8] However, domestic copyright litigation is a remedial tool available only in limited circumstances. This is because the piracy is a global phenomenon, often involving sites and services that operate entirely offshore, outside the effective reach of our courts. Pirates take advantage of the borderless Internet and readily available technologies to distribute streams worldwide. To illustrate this point: approximately 75% of the pirated retransmissions of our game telecasts have occurred through sites and services located offshore, and approximately 50% through sites and services located in China.

Under these circumstances, the remedial steps available to the U.S. private sector are limited. We therefore believe that coordinated initiatives are needed to arrive at enduring solutions, and are encouraged by several already underway. One private sector initiative is the Coalition Against Online Video Piracy, a forum through which more than fifty worldwide sports

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and mobile device users. Strong action to curb trademark counterfeiting and copyright piracy on the Internet is critical to the future of IPR [intellectual property rights] protection in China.").

[8] *See Twentieth Century Fox Film Corp. v. iCraveTV*, 2000 U.S. Dist. LEXIS 11670 (W.D. Pa. Feb. 8, 2000); *cf*. Register of Copyrights, Satellite Home Viewer Extension and Reauthorization Act Section 109 Report at p. xii, 181-189 (June 2008), *available at* http://www.copyright.gov/reports/section109-final-report.pdf (retransmissions of television programming over the Internet require licenses from copyright owners).

organizations (including MLB), entertainment companies, telecasters and trade associations share information, resources, experiences and strategies.[9] One private-public sector initiative is the ongoing dialogue that MLB, NBA, NCAA, NFL and NHL have with USTR. USTR should be commended for its early identification of this matter as an international intellectual property rights protection and enforcement issue in its 2008 and 2009 Special 301 Reports to Congress.[10]

We also believe that international cooperation about this problem must be improved. Most nations are both exporters and importers of television programming. So we see common ground – both in terms of shared economic interests and legal obligations – for the U.S. and the nations with which it engages in international trade to work cooperatively to stop Internet-based television piracy. We therefore recommend that Congress and the Administration give this matter priority in our nation's ongoing efforts to improve intellectual property rights protection and enforcement on a worldwide basis.

In conclusion, this emerging breed of piracy is international in scope and has demonstrated growth characteristics. The threat it poses to the U.S. televised media sector must be taken seriously. We believe it is prudent to move proactively against this threat now, and commend this Committee for shining a spotlight on it today through this hearing.

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[9] *See* http://web.caovp.com.

[10] Office of U.S. Trade Rep., 2008 Special 301 Report at 10 *available at* http://www.ustr.gov/about-us/press-office/reports-and-publications/archives/2008/2008-special-301-report ("[u]nauthorized retransmission of live sports telecasts over the Internet is reportedly becoming an increasing problem internationally, particularly in China"); USTR, *supra* note 8, at 5 ("[u]nauthorized retransmission of live sports telecasts over the Internet continues to be a problem in many countries, particularly in China"). Another initiative involved the U.S. Copyright Office and Patent and Trademark Office in connection with their representation of the U.S. at the World Intellectual Property Organization's ("WIPO") discussions about a proposed Treaty for the Protection of Broadcasting Organizations. The U.S. delegation should be commended for specifically identifying the matter of Internet piracy of television programming (in its June, 19 2007 statement during a WIPO Standing Committee for Copyright and Related Rights session) as one that could be addressed in an appropriately crafted treaty. *See* Mellis, *supra* note 1, at 276.

As we develop more experience in this area, we look forward to the opportunity to make additional recommendations to you. Once again, thank you very much for your interest in this matter and the privilege of addressing you this morning.

TESTIMONY OF AYALA DEUTSCH,
SENIOR VICE PRESIDENT & CHIEF INTELLECTUAL PROPERTY COUNSEL
NBA PROPERTIES., INC.
BEFORE THE
COMMITTEE ON THE JUDICIARY
UNITED STATES HOUSE OF REPRESENTATIVES
“PIRACY OF LIVE SPORTS BROADCASTING OVER THE INTERNET”
DECEMBER 16, 2009

Chairman Conyers, Congressman Smith and Members of the Committee, my name is Ayala Deutsch and I am Senior Vice President & Chief Intellectual Property Counsel for NBA Properties, Inc., the exclusive licensing and merchandising arm of the National Basketball Association ("NBA"). We greatly appreciate the opportunity to describe to the Committee the NBA's experience with the growing problem of sports content piracy on the Internet and to provide information about online piracy that we hope the Committee will find pertinent to its inquiry into this issue.

NBA Game Telecasts and Digital Content Distribution

The NBA operates the premiere professional basketball league in the world and has, for decades, invested enormous resources in generating high quality sports entertainment. As a result of the great popularity of NBA basketball games, the NBA has established a highly successful business in licensing copyrighted game telecasts for distribution in the United States and internationally. Domestically, NBA game telecasts are distributed through over-the-air, cable and satellite television broadcasts – including, nationally, on ESPN, TNT, ABC and NBA TV (the first 24-hour television network created and operated by a professional sports league) and, locally, through broadcast television stations and regional sports networks. Internationally, the NBA will broadcast its games in more than 200 countries around the world during the 2009-10 NBA season.

Building on the success of its television broadcasting business, the NBA has developed a flourishing and wide-ranging sports media business, which, increasingly, has included digital distribution of NBA content. NBA Digital, jointly managed by the NBA and Turner Sports, is the NBA's extensive cross-platform of digital assets including NBA

TV, NBA.com, NBA Mobile and NBA League Pass, the NBA's out-of-market subscription package.

The NBA has been at the forefront of online distribution of live sports content, including offering free streaming of select NBA games in the U.S. and other markets. Last season, the NBA launched a live Internet game webcast packages - NBA League Pass Broadband - which provide fans in 75 countries with access to a full season of live NBA game webcasts over the Internet. More recently, the NBA launched NBA League Pass Mobile, which for the first time allows fans to watch NBA games on their mobile devices.

Online Piracy of Live NBA Games

Given the NBA's substantial investment in its game telecasts and the great value of the exclusive ownership rights in those telecasts, the NBA is affected by any unauthorized distribution of NBA content, including over the Internet. The online piracy of live sporting events has a particular impact because of the great value to consumers of being able to access that content while the event is still in progress. Other video content offered online, including television programs and motion pictures, often remains popular well after its debut; in contrast, sports fans' interest in viewing live sporting events is greatest while the event is happening.

As a growing number of people choose to consume content online, the incidence of live content piracy continues to increase. At the same time, advances in technology have made it easier for individuals to capture live television signals and retransmit them over the internet in real-time, creating a live "stream". What previously required dedicated computer hardware and advanced technical knowledge now can be achieved

with nothing more than basic equipment and technology – a personal computer, a cable or satellite television connection, a TV tuner card, and an internet connection.

The technology used to stream live content over the Internet continues to evolve. Initially, the majority of streaming was conducted through unicasting, where the content was distributed directly from a web server to the end user. Over the last two years, there has been a shift to peer-to-peer (P2P) technology, which allows a single stream to be shared by a network of individuals through P2P hosting sites. Recently, "lifecasting" websites, which allow users to post live video streams, have become more widely used.

Regardless of the technology, information about how to access unauthorized streams of live sports content is widely available on message boards, blogs, and social networking sites. In addition, numerous sites dedicated to aggregating and indexing unauthorized streams make that content even easier to access.

All of these factors have contributed to the growth of live sports content piracy. Although it is difficult to accurately quantify the number of unauthorized streams that take place during any given NBA game, the NBA has seen a sharp increase over the past few seasons in both the number of websites offering pirated content and the overall number of unique pirated streams. During the 2008-09 NBA season, the NBA monitored approximately 500 websites for unauthorized streams of NBA games and captured evidence of thousands of pirated streams. For just one game of the 2008 NBA Finals, the NBA identified more than 50 unique unauthorized streams. Based on the limited data we have collected to date for the current season, we believe online piracy of NBA content will continue to increase.

While the problem of online piracy of live sports content continues to evolve in the United States, the NBA has encountered significant problems with unauthorized live streaming in countries throughout Asia and Europe. To date, more than half of all unauthorized streams the NBA has identified appear on P2P websites operated outside the United States, including in China. The volume of online piracy of NBA content in China reflects both the NBA's enormous popularity in that market and the ineffectiveness of existing enforcement regimes.

Currently, there is little reliable data reflecting the overall scope of unauthorized streams of live sporting events and the number of views each stream receives, in part because much of the piracy occurs on rogue off-shore sites, the operators of which do not have to answer for their illegal activity. Based on the limited information available, however, the extent of sports piracy could be significant; for example, one of the most egregious Chinese P2P websites touted its infringing technology last year by claiming that almost 1.2 million users viewed the stream of a single NBA Playoff game featuring Chinese-born Yao Ming from the Houston Rockets.

The NBA's Efforts to Combat Online Piracy

Although the impact of unauthorized streaming of live sports content cannot be quantified at this time, the NBA considers enforcement against content piracy to be a matter of the highest priority. The NBA dedicates considerable resources to combating online piracy in order to protect the value of NBA game telecasts, the increasing scope and diversity of the NBA's digital media business, and the NBA's exclusive right to control distribution of live games.

The NBA's anti-piracy efforts include allocating internal resources and retaining outside vendors to engage in the daily monitoring and enforcement of live streaming websites. In addition, NBA in-house legal staff and outside counsel send takedown notices and demand letters to pirate sites, conduct follow-up investigations, and pursue appropriate legal action.

The NBA also has explored business solutions to help reduce content piracy and facilitate enforcement efforts, engaging directly with aggregators and hosting sites whenever possible to advocate for the implementation of policies and practices that enhance the ability of rights owners to address unauthorized streaming.

In addition to its individual enforcement efforts, the NBA has participated with other rights holders in a variety of initiatives aimed at raising awareness of content piracy in the public sector, both in the United States and abroad. For example, the NBA has joined with other U.S. sports organizations in communicating with the USTR about sports content piracy, including through submissions made as part of the Special 301 Report to Congress in 2008 and earlier this year. The NBA also is a member of the Coalition Against Online Video Piracy, a group of representatives from leading sports organizations, motion picture studios and broadcasters that has been active in addressing content piracy, including engaging in an ongoing dialogue on that issue with officials from a number of interested Chinese government agencies.

Despite these efforts, effective enforcement against online piracy of live sporting events remains challenging. To date, no single technology has been proven to effectively stop unauthorized live streaming. Monitoring and takedown programs, which are the most widely available means to enforce against unauthorized streams, have proven to be

insufficient to fully address the problem. These programs require the rights owner to engage in several steps and often can result in a delay between submission of the takedown request and removal of the unauthorized stream. Given the relatively short duration of live sporting events, time is of the essence in removing unauthorized streams and any delay can be significant.

Even in those instances in which the NBA has direct access to an automated tool, takedown can be ineffective. Once an unauthorized stream has been removed, recidivist infringers are able to repost additional unauthorized streams of the same content in the absence of strict penalties imposed by the site operator to address repeat offenders.

Conclusion

The NBA continues to invest significant time, money and resources in enforcing against the unauthorized distribution of its valuable copyrighted content. Like other content owners, the NBA continues to face challenges in its enforcement efforts - including the global nature of illegal streaming activity and the inadequacy of enforcement measures available internationally to address piracy and the fast-moving evolution of technology and distribution models employed by those engaged in unauthorized streaming.

We continue to closely monitor online streaming of sports content and to explore possible solutions to address this illegal activity. We appreciate the Committee's interest in live sports content piracy and look forward to working with the Committee as it further examines this important issue.

TESTIMONY OF

THE NATIONAL FOOTBALL LEAGUE

BEFORE THE

COMMITTEE ON THE JUDICIARY

UNITED STATES HOUSE OF REPRESENTATIVES

“PIRACY OF LIVE SPORTS BROADCASTING OVER THE INTERNET”

DECEMBER 16, 2009

Chairman Conyers, Ranking Member Smith, Members of the Committee:

The National Football League appreciates the Committee's interest in the piracy of live sports broadcasting. We are pleased to have received an invitation to submit testimony and share our experience with online piracy of our games. We look forward to working with you in the future to address this issue.

The National Football League

> "This telecast is copyrighted by the NFL for the private use of our audience. Any other use of this telecast or of any pictures, descriptions, or accounts of the game without the NFL's consent, is prohibited." -NFL Broadcast Copyright Notice

For decades, the NFL has advised viewers, fans and would-be copyright infringers that the NFL game telecasts are copyrighted, protected content. Nonetheless, internet pirates, with full knowledge of their infringing behavior, are streaming live NFL games without the NFL's consent.

NFL football is the most watched professional sport in America. According to consumer survey data, the NFL is the most popular spectator sport, with nearly 180 million fans and more avid fans than any other sport.[1] Over 245 million Americans watched the NFL's 2008 season and over 151 million Americans watched Super XLII, making it the most-viewed television program in U.S. history.[2] The NFL's popularity is reflected in the reach of its viewership and is a direct result of the NFL's media strategy. Unlike other sports properties, NFL programming is limited to 16 regular season games per team and a series of 10 playoff games culminating in the Super Bowl championship

[1] ESPN Sports Poll 2006-08
[2] Nielsen Media Research 2009

game. Because every game impacts a team's ability to progress to the playoffs, each game is significant.

Each of the NFL's 256 regular season games and every post-season game is televised on free over-the-air television. Every fan can watch all of the local team's away games on broadcast television. If sold out at least 72 hours in advance (as is almost always the case), each home game is televised locally over-the-air as well. In addition to making available home team games, the NFL offers fans with viewing options that include a slate of regional and nationally televised games. This includes multiple offerings on Sunday afternoon (CBS and FOX), one nationally televised game on Sunday night (NBC), one nationally televised game on Monday night (ESPN), and beginning in November, a series of nationally telecast games on the NFL Network. All NFL playoff games, including the Super Bowl championship, are televised by one of the free over-the-air broadcast networks on a national basis. These viewing options are supplemented by NFL Sunday Ticket on DirecTV – a satellite package for Sunday afternoon games that allows fans to view games from throughout the country – and through services that offer online and mobile streaming of game content.

Last season, NFL games on broadcast television (CBS, FOX and NBC) averaged 16.6 million viewers, 89 percent higher than the average primetime viewership among the four major over-the-air networks. On cable, ESPN's *Monday Night Football* was the most-watched series during the 2008 season, with an average of 12.0 million viewers. [3] Because of the popularity of NFL football and the significant viewership that it garners, broadcasters pay significant fees for the right to broadcast NFL football games. If not for

[3] Nielsen Media Research 2009

the ability to sell advertising at premium rates during NFL game telecasts, broadcasters may not be willing to pay these significant rights fees.

To satisfy evolving consumer demand and add value to NFL broadcast partners' investments, the NFL has undertaken new media initiatives offering fans live online streaming of NFL games. For example, the NFL has authorized free live streaming of nationally telecast NFL Sunday night games on NBC as a complement to its broadcast rights. In addition, the NFL offers NFL Sunday Ticket Super Fan, a subscription service that permits upgraded NFL Sunday Ticket subscribers to access online streams of live NFL games, and NFL Game Pass, another subscription service that provides fans outside North America access to authorized streams of live NFL games. These digital media initiatives expand the audience for NFL football, but do not siphon off the existing audience from broadcast television.

Both broadcast and new media distribution platforms are threatened by the unauthorized distribution of live NFL game content. In order to ensure that the value of the NFL's live game asset is protected, it is critical that the NFL maintain exclusive control over the availability and distribution of live NFL games. Online piracy threatens the investment broadcasters and digital media companies are willing to make to distribute NFL live content, the ability of our member clubs to sell game tickets and secure local television and radio carriage, and the value of advertising revenue generated by broadcast, radio and new media partners.

Online Piracy of Live Games

Live sports content is pirated on a real time basis through the internet either by streams that are retransmitted through peer-to-peer network services ("P2P"), directly from a web server to the end-user ("unicast"), or through live streaming user-generated content sites sometimes called "lifecasting" sites. The content is intercepted, typically, by using a component that allows television signals to be received by a computer and streamed in real time over the internet. Internet users can access these streams with relative ease. Internet web logs, chat boards and social media sites are replete with guides on how users can view unauthorized streams of intercepted video content. In addition, index sites sweep the web and gather information on live streams, then provide links back to the channel on stream aggregator sites where the intercepted streams are broadcast.

Online piracy of live NFL telecasts is a growing problem. During the 2008 season, the NFL identified over 1,045 unauthorized streams, including during Super Bowl XLIII. Approximately three-quarters of the way through the 2009 season, the NFL has already identified over 1,600 streams and as many as 200 streams in a given week. Almost all televised games from the NFL can be located on live streaming services.

Online piracy is also a global problem. Pirate services, including hosting services, indexing sites and stream originators, are believed to operate out of Canada, the Netherlands, People's Republic of China, Republic of Korea, Sweden, Israel, and the United Kingdom. The laws in many of these countries do not afford live sports programming adequate intellectual property protections.

NFL Enforcement Efforts

As a response to the growing threat of online piracy, the NFL has committed significant resources to combat the proliferation and impact of unauthorized live streams of NFL games. The NFL has increased its staff to protect NFL content from unauthorized streaming on, for example, peer-to-peer services and web sites hosting user generated content. In addition, the NFL engages outside attorneys and vendors to identify, investigate and take-down unauthorized streams.

In addition to these global take-down efforts, the NFL has initiated a dialog with site aggregators to try to establish efficient takedown notification programs. While this is currently the principal means by which sports content owners address unauthorized streams, often, the tools are inadequate to address the scope of the problem. First, the onus rests with the content owner to locate the unauthorized streams, record evidence of the infringement and send notification to the site, service or host to remove the content. Second, once the take-down notices are sent there is often lag time for compliance, ranging from several minutes to several hours. Because the average NFL football game lasts only 182 minutes, every minute of lag time matters and the speed with which response is received is critical. Finally, it is often the case that site originators re-issue unauthorized streams once they have been removed as a result of a take-down notice. Therefore, protecting live sports content becomes a virtual game of wack-a-mole, with content owners trying to remove streams that pop up minutes after they are taken down. To date, there is no technology solution offered that effectively identifies and filters unauthorized live streams from the internet on a real time basis.

The NFL has also joined in strategic partnerships, working alongside other content owners to identify online piracy patterns, raise awareness of online piracy on a global level and explore enforcement mechanisms to address the issue.

* * * *

Despite significant resources dedicated to addressing pirated streams, content owners continue to face challenges due to the inadequacy of current enforcement technology available to content owners, and piracy's international scope. Every year the NFL invests substantially more time and resources dedicated to combating online piracy. We believe this is a timely investigation and look forward to cooperating with the Committee as it considers these issues.

UNITED STATES TENNIS ASSOCIATION

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Daniel Malasky, Esq.
Senior Counsel, Professional Tennis

December 23, 2009

Honorable John Conyers, Jr.
United States Congressman
Chairman, Committee on the Judiciary
2426 Rayburn
H.O.B.
Washington, D.C. 20515

Re: Hearing on Piracy of Live Sports Broadcasting Over the Internet

Dear Chairman Conyers, Ranking Member Smith, and distinguished members of the Judiciary Committee:

I would like to thank you for recognizing the very important issue of piracy of live sports broadcasting over the internet in the hearing held before your Committee on December 16, 2009. ESPN, MLB, UFC and Professor Yoo presented the challenging and complex issues in this area which pose a credible threat to the USTA and other broadcast copyright owners in the United States.

The United States Tennis Association ("USTA") was established in 1881 and serves as the national governing body for the sport of tennis in this country. As the largest tennis organization in the world, with 17 geographical sections and more than 700,000 members, the USTA is the recognized leader in promoting and developing the sport's growth on every level, from local communities through its grassroots efforts to the crown jewel of the professional game, the US Open.

The US Open is the largest annually attended sporting event in the world, hosting over 720,000 visitors in 2009 and having a domestic television audience of approximately 100 million viewers during the two week event. As part of our exclusive domestic television broadcast

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arrangement in 2009 with CBS, ESPN and Tennis Channel, 398 total hours of US Open coverage was aired, 222 hours of which aired live. Internationally, more than 35,000 hours (nearly 28,000 live) of the US Open was broadcast in 187 countries through excusive arrangements with our international broadcast partners.

Stemming from the success of the television broadcast of the US Open, the USTA and its exclusive broadcast partners developed and implemented a digital distribution platform to expand the coverage of select US Open matches to reach an online audience. During the 2009 US Open, 157 tennis matches were streamed live domestically for free in high definition resulting in nearly 14 million activated streams totaling more than 2.5 million hours of live streamed content on USOpen.org, the official website of the US Open.

Through the revenue generated by the US Open, and more specifically, though a portion of the license fees paid to the USTA by its broadcast partners for the exclusive rights to cover the US Open, the USTA is able to allocate millions of dollars annually towards promoting the growth of tennis at the grassroots level in the United States. Working with our broadcast partners, the USTA works vigorously to identify copyright infringers and issues take-down notices to infringers to remove US Open match footage that is pirated and aired without the consent of the USTA on unlicensed networks and websites. USTA is also a member of the Coalition Against Online Video Piracy, a forum through which more than fifty worldwide sports organizations, entertainment companies, telecasters and trade associations share information, resources, experiences and strategies about this problem. Despite these efforts, the current tools available to the USTA and other copyright owners to fight the intellectual property breaches and effectuate the removal of the illegal streams are scarce, costly, and ineffective given the time constraints in which a point, game, set, match, and in many cases the entire tournament, is played.

The USTA is deeply concerned over the increase in the number of sites illegally streaming match footage from the US Open, copyrights in which are held by the USTA. The number of websites and services involved in pirating US Open content is significant and is on the rise. Further, the resources necessary and costs associated with self-policing these websites is prohibitive for an organization like the USTA which takes pride in redistributing revenue from the US Open into communities around the United States through grassroots tennis programs.

The USTA stands committed to work with this Committee toward efforts to curb the piracy of live of sports broadcasting over the internet.

Sincerely,

Daniel Malasky, Esq.
Sr. Counsel, Professional Tennis

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Appendix B

Piracy of Digital Content

Chapter 4

Case Study: The Sports Rights Owners Sector

What is the sports rights owners sector?

The sale of rights to broadcasters is a major source of income for those sport organisations and leagues that control and own sports and sporting events. Depending on individual contracts, the sale of those broadcast and associated rights could include:

- live broadcasting of sporting events (TV and radio).
- live or delayed streaming of events on the Internet.
- delayed broadcasts/streaming of those sporting events.
- packaging of highlights.
- subsequent DVD releases as individual events or as part of sport compilations.
- subsequent rebroadcasts as "classic" or "historic" events.

Broadcast rights may include regional or geographical limitations; for example, some broadcast rights may only cover specific countries or regions, and broadcasters in individual countries would have to obtain the rights to broadcast in their own territories. The most obvious example of this is the Olympics, where the successful host broadcaster generally re-sells the rights to national broadcasters that want to provide coverage of the Olympic events in their countries.

Apart from the Olympics, the owners of sports rights include all of the world's best known, and most high-profile sporting organisations, such as the *Fédération Internationale de Football Association* (FIFA, football), the *Fédération Internationale de l'Automobile* (FIA, motor racing), the National Basketball Association (NBA, basketball),Wimbledon (tennis), Cricket Australia and others.

While all of the portfolio of media rights listed above have value to the sports rights owners, the first two are clearly the most important and lucrative, as the live event is the product that has the greatest appeal to a prospective audience. While a short life span was identified in the main study as a special feature of digital products generally, the life span of live sports events is extremely short, and their value could deteriorate dramatically in minutes or even seconds (for example a horse race).

Once the sport event has ended, and the results known, interest (and therefore the value of the product) falls away sharply, even though its value does not totally disappear. Therefore, while acknowledging that there are a series of cascading commercial opportunities at risk from piracy involving sport broadcasting, this case study will largely focus on the first two elements in the list, representing the most valuable components of the broadcast rights, as well as being the segments that would be of greatest interest to pirates and their audiences.

What is at stake?

While this case study (and indeed its parent study) does not specifically measure the extent of digital piracy, it is nonetheless useful to briefly consider some examples of the magnitude of financial commitments around the world involving sport events that are at risk from piracy.

At an international level, broadcasters will pay USD 3.8 billion for exclusive rights to carry the 2010 Vancouver winter and 2012 London summer Olympics.[1] On a regional level, the Union of European Football Associations (UEFA) sold the rights to Euro 2008 for EUR 800 million,[2] while at a country level a consortium of Sony Television and World Sports Group was reported to have won a 10-year deal to telecast the Indian Cricket Board promoted Indian Premier League cricket matches for USD 1.026 billion.[3]

These are a few examples of the many sports broadcasting arrangements that exist around the world, and are intended to highlight the very significant investments made by sports broadcasters for the rights to those events. These investments, and in some cases possibly the future of individual sports, could be at significant risk if there is extensive piracy of the live broadcasts of events covered by those rights.

How is intellectual property created in this sector?

This case study specifically addresses the infringement of Intellectual Property Rights (as defined in the WTO TRIPS Agreement) when those infringements are associated with the sports owners rights sector. This means that while the sporting events themselves are not the subject of the

study, as the main study on digital piracy makes clear, in most legal jurisdictions the broadcasting of the sporting events (and recordings made of those broadcasts) are protected by copyright law, and unauthorised transmission, streaming or recording of those broadcasts would infringe on those rights. It is these rights that are covered in this case study.

The infringement of those copyrights (in the terminology of this study "the piracy") would include the live streaming of the broadcasts as well as post-event downloads of full games or highlights.

How does piracy take place?

Earlier in this case study, it was noted that the original, live broadcast of sporting events is the time when those events have the greatest intrinsic value. Therefore, piracy that takes place during (or immediately after) the broadcast have both the greatest interest to consumers and the greatest potential of inflicting significant damage to the owners of the rights.

In this respect, as was the case with the examination of the audio/visual sector in Phase I of the overall study (OECD, 2008a), rapidly developing technology has provided would-be pirates with the means of intercepting and re-transmitting those broadcasts, in virtual real-time, thus enabling them to compete directly with the authorised broadcast or Internet streaming of the individual sporting events.

While it has been technically possible for many years to record TV broadcasts (recordable VHS tapes came into existence in the mid-1970s, and moved through DVDs and hard disks), these could not readily be re-transmitted to a broader audience without access to extensive and expensive broadcasting facilities, and piracy was restricted to serving the after-market, well after the live event had ended.

However, modern computers with cheap and easily fitted TV cards (increasingly found as standard fittings on home computers), can capture live TV signals from terrestrial, cable, satellite and Internet broadcasts, and with the use of some simple, freely available software can re-transmit those signals through the Internet. These captured signals can also be converted to digital data files and saved on a hard disk for subsequent viewing or transmission.

This capturing of the signal is the single most important pivot point in the piracy of sports broadcasts, as it is the means by which the pirates can – in virtual real time – illegally distribute the pirated content in direct competition with the rights owners, and at the precise time when the pirated content has the greatest value.

Software capable of producing content in a form that can be streamed to other Internet users is freely available, including in the form of a built-in capability in the popular Windows Media Player. In addition, the websites Sopcast and TV Ants (both based in China) have been identified[4] as two of the principal sites (amongst many that can be found on the Internet) that freely provide the software that permit users to generate and re-transmit a live broadcast stream at virtual real time within their own networks.[5]

The availability of this technology, and the increasing availability and affordability of Broadband connections, means that virtually anyone can now stream live programs through the Internet, which (like making music and video content available illicitly through the Internet) creates significant problems for the owners of broadcast and subsequent IP rights.

In essence, as the live transmission signals are captured by the computer's video card, they can be re-transmitted on the Internet either to individual recipients through Unicast transmissions, or as part of a transmission "swarm" using peer-to-peer (P2P) technology.

Unicast transmissions

The basic operation of Unicast transmissions on the Internet is that captured digital content (in this case live sport broadcasts, but could involve any TV transmission), is routed and/or stored on powerful servers and made available through direct Internet streaming from Unicast providers to individual viewers.

This one-on-one approach distinguishes Unicast transmissions from the swarm approach of peer-to-peer, which is discussed in the next section. Depending on the quality of the signal originally captured, the density (bit-rate) of the transmission and the width of the broadband connection, Unicast transmissions can offer transmissions of acceptable quality directly into any typical media player found in home computers. This means that viewers would be able to watch sporting events with little initial delay (caused by the need to create the initial signal buffer), or subsequent pausing to replenish the buffer (this may happen, for example, if there is a slowing down of the Internet signal).

In other words, these transmissions can provide virtual live feeds, in acceptable quality and with very little delay, in direct competition with the original, legitimate broadcast.

This one-on-one format, especially if fed to a large number of end users, can be very demanding of computer processing power and bandwidth, and there is generally a considerable cost associated with running such an operation. As a consequence many of these services either require a paid

subscription, are supported by advertising or both. As such, they fit into that category of digital piracy (described in the principal study) that falls between the legitimate services offered by the broadcasting rights owner (whether a live TV signal and or live streaming on the Internet) and the generally free alternatives offered by the peer-to-peer networks.

There are clear incentives for sites offering Unicast services to appear as professional as possible in order to generate trust and attract customers, especially if subscription fees are charged. Many of these sites have sleek designs, smoothly operating interfaces and may feature logos from well know international companies, including sports rights owners and sponsors of the sport concerned. Additional apparent security (for the customer) is provided by the fact that payment for the transmission can be legitimately made through credit cards or PayPal. These are features that one would expect to find on legitimate site offering authorised transmissions (see Figure 4.1).

Such embellishments of the pirate sites encourage potential subscribers to view them as legitimate, and indeed in many cases it might be virtually impossible for most users to know (or even suspect) that such sites were not authorised to offer the streaming content.

If the quality of the streaming is good, then the pirate sites need not price their services at levels that are so far below those of legitimate sites that their provenance would be suspect. In any case, in these days of services being increasingly supported by advertising as well as subscription, price is not necessarily always a good basis for consumers to make judgements about the legitimacy of sites. Quite clearly this adds to the difficulties faced by the sports rights owners of the broadcast rights to stem the offerings from sites that can convince users into believing that they offer a legitimate service.

Figure 4.1. Screenshot of a typical Unicast site

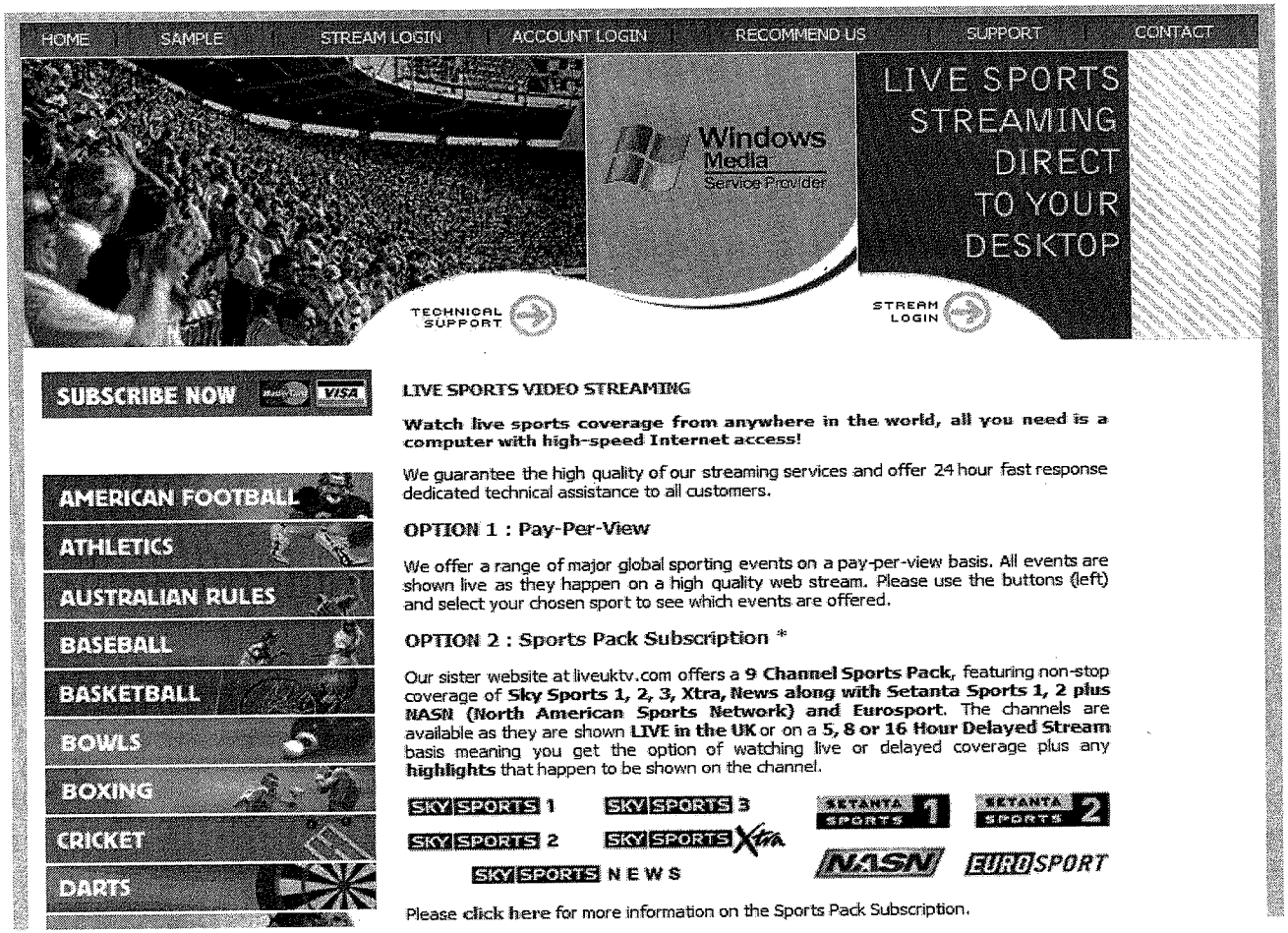


Figure 4.2. Screenshot of MyP2P

Figure 4.3. Sopcast screenshot

Sopcast
Current version: v3.0.3

Sopcast is, like all programs, also fully free. It's one of the older programs, and it has been developed very well with alot of interesting feautures and options. It's so far the best program, besides the fact it can't handle most busy moments. It's fully English, and many other languages are available aswell.

Release notes:
[Apr 30, 08] release 3.0.3

* Improve the data transfering performance
* Fixed a bug in data transfering layer
* Fixed a bug in lauching external player
* Add a FAQ tab in client
* Fixed some other minor bugs

Channels:
Alot of main channels like StarSports, ESPN, CCTV5, SHTV, Guandong, 3TV1 cable channels and many good test channels. Also many movie channels, series and music or stuff.

Instructions:
Install 3.0.3 by scrolling all the way down, at the bottom of the page!

New version, so it works great with an additional VOD function. VOD = Video on Demand, think of a movie, or a serie: you can watch it at any time you want, and it will always start from the first minute on!

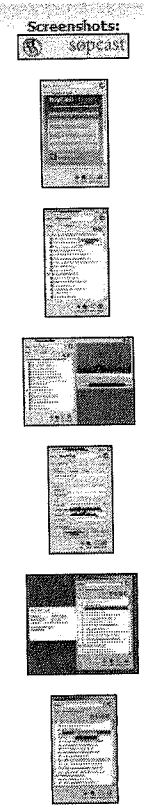
*** How to install?**
Scroll down to the bottom of this page, and download the ZIP File. Unzip it, and run the Sopcast.exe file. It will ask you to install, so just do so. It's smart to close your browser (IE or Firefox) before installing.

*** How to watch?**
There are 2 ways to watch:
- Start a channel from our schedule pages, you click a link and then it starts Sopcast + the channel.
- Start sopcast manually and select a channel. You can login as anonymous, or register a free account on Sopcast.com . By clicking any channel it will open a new frame with the channel loading.

To watch VOD channels you need to have Reaplayer also!

*** Problems?**
See our FAQ Page: http://www.myp2p.eu/faqitem.php?faqgroupid=9&=home

Enjoy sopcast!



Peer-to-peer (P2P) networks

As described in the principal study, as well as easier access to Broadband, the growing availability of increasingly sophisticated P2P software is a key driver that influences the demand and supply of pirated digital content, including live sports broadcasts.[6] In essence, P2P networks operate in the following way. Using one of the many available peer-to-peer networks, a person can establish a video stream that is available to others who join the stream. Software allows the stream to be broken up into small packets, which are then transmitted to others in the stream. As any given packet is downloaded and received by an end user, it then becomes immediately available to be uploaded to another user, thus creating a "swarm" on the network.

Generally, the more users are online the better the quality of the stream, with the end result that after some initial buffering of the signal, the quality of the transmission can be quite acceptable. It will, certainly be more than good enough for keen fans, who may not otherwise be able to access the live broadcast or are unwilling to pay for a legitimate service, and who will accept some degradation in quality in order to watch the sporting event live. A brief delay in the transmission (even of some minutes) would probably not significantly degrade the experience for many fans. In addition, the popularity of many sports, and the inability (or unwillingness) of many fans to watch the live transmission through legitimate services, would ensure that the on-line "community" for the more popular events would almost always have sufficient participants to ensure a successful P2P transmission.

The availability of web-based search tools means that it is not difficult to find P2P piracy streaming sites. However, for end users that task is made considerably simpler and more efficient through services that collate, index and promote sporting events. One such site is MyP2P,[7] which in a very lucid and comprehensive site (apparently supported by advertising from large and reputable multinational companies),[8] provides details of pirated live streaming covering a wide range of sports, from football (at the time of writing, all matches in the Euro '08 competition were being streamed) to cricket (which has a very large following in the sub-continent) – see Figure 4.2.

Using sites such as MYP2P simply require the downloading and installation of some free software, which then allows access to any of the live streams offered on that site. Detailed system information as well as on-line technical support is generally available to assist users in setting up their participation in the P2P networks (see Figure 4.3).

While the hosting site (sometimes called a tracker) organises and manages the different streams it does not actually distribute any video content; this is left to those users who participate in the peer-to-peer "swarm". In this respect, these live streaming sites operate in very similar fashion to other peer-to-peer and bit-torrent sites that are used to exchange and circulate digital content (even though not all of these activities involve the illicit exchange of copyright material).

Some distinctions between P2P and Unicast sites

While in the end the role of both of these forms of streaming technology, when applied to live broadcasts of sporting events, is to deliver a video stream to the end user, there are some factors that distinguish the forms of delivery:

- the Unicast sites, because of the need for significant computer processing power and Internet bandwidth to stream content to individual end users, generally apply subscription charges to end users wishing to access their services.
- while users of Unicast sites might have reason to believe that they are using a legitimate service provider (because of the professional appearance and a commercial feel to the sites), users of P2P sites would be under no illusion that they are using non-authorised sites to view the sporting events.
- users of Unicast sites are simply receivers of the video stream, but in the case of P2P sites they are (generally) simultaneously a receiver and a supplier of the content, and this may have different legal implications in some jurisdictions.

Other methods of pirating broadcasts of sports events

The Unicast and P2P methods are by far the most significant methods to pirate sports events, but they are not the only ones. Increasingly, sports events have been detected on user-generated content (UGC) sites; for example one sports rights owner reported that over 15 000 unauthorised clips were removed from one such site. In addition, while originally these sites were exclusively involved with archival content, *i.e.* recorded or delayed clips, in recent times a small number of UGC sites have been detected offering fans live streams via their servers.[9] While the majority of material on UGC sites probably does not infringe copyright, the growing popularity of these sites is likely to create further problems for sports rights owners in the future.

What are the market characteristics of the sports broadcasting sector?

In the broadest possible terms, the market for live sporting broadcasts would comprise all of the fans and other interested persons who are not present as spectators at the event, but who would nevertheless wish to share in the excitement of that event by watching a live broadcast/transmission.[10]

Many in this potential audience would be accommodated by the broadcast of the event either on free-to-air television, or on some form of paid television broadcast (perhaps delivered by satellite or cable) or (increasingly) by legitimate live streaming through the Internet.

However, this scenario leaves a proportion of potentially *legitimate* demand unfulfilled; that is customers who for one reason or another may be unable to access legitimate broadcasts/transmissions, for example:

- Legitimate live broadcasts may be region-specific and not available in all markets, perhaps because of contractual reasons, or because some markets may lack a sufficient audience base to make the broadcast financially attractive – cricket in continental Europe is a good example.
- Broadcast rights may exist, but only as delayed telecasts or through the provision of "highlights" packages, thus not meeting the requirement of potentially legitimate customers wishing to see the event "live".
- Large events with multiple activities (*e.g.* the Olympics or Wimbledon tennis) provide broadcasters with a choice of parallel sub-events that they can broadcast, which may leave a section of the potential audience unsatisfied with the broadcaster's choice; for example, a national TV channel may choose to focus on tennis matches featuring their home players, thus leaving other viewers unsatisfied.

This potentially legitimate market could consider itself as being forgotten or ignored by the broadcasters, and failing any other authorised alternative may turn to unauthorised live streams as a way of overcoming their "disadvantage". This attitude parallels the experiences in other digital content (such as popular TV shows or films) where licensing agreements and staggered roll-outs means that certain markets may have legitimate access to that content only after a considerable time from first release, or perhaps not at all, which encourages access to pirated alternatives.

In the live sports sector the effect of customer isolation from legitimate services is probably even more acute than other digital content, given that when the game has been played, and the result known, a lot of the interest

wanes from the sporting event. This would act as a further encouragement for those fans to seek whatever alternatives are available to view the events live.

In addition to this unsatisfied and potentially legitimate market, there is also an *illegitimate market*, composed of those who, for a variety of reasons, will choose illicit ways of viewing those sporting events. If the general market for pirated content is any guide, then this market segment will be large, and will respond to the same incentives as those that drive demand for pirated music, films software and other digital content. That is, the market will be composed of persons ranging from those who simply cannot afford the cost of the legal options, through to those who would always choose the illicit alternatives (especially if they are free) regardless of the legitimate options that may be available to them.

In the context of live sporting events this would mean the use of unauthorised live transmissions or streaming, instead of paying the cost of legitimate services, perhaps available only from cable/satellite services on either period subscription or pay per view formats. Additionally, the illegitimate market would also include those who have generally permissive attitudes to digital piracy, and who see their participation in P2P swarms as a "community" activity, which from their perspective would enable others to "benefit" from their on-line participation in such peer-to-peer activities. These and other related drivers of digital piracy are discussed in more detail in the main study.

The combination of the potentially legitimate viewers who cannot access authorised services, and those who seek unauthorised streams even when legitimate services are available, describe the audience that may wish to access these alternative services. Many of those that have suitable Internet access, and have sufficient technical know-how to access Unicast, P2Pand even some UGC sites, may choose to use these to avail themselves of the illicitly provided live streaming or other access to those sporting events.

No effort has been made to estimate the potential size of this market, as this is outside the terms of reference for this study. However, as a pointer to the kind of audiences that might tune in to live sports broadcasts captured and streamed through the Internet, information provided to the OECD (Sports Report, 2008) noted that in December 2007 a total of 1.2 million views were registered on a SopCast channel that streamed a match from the US National Basketball Association (NBA). From a large sample of those connected to the stream, the largest proportion (around 78%), were found to be located in China. Similarly, the highest number of viewers ever recorded for a single P2P stream for cricket was more than 700 000. A number of other similar examples representing other sports were also reported.

In summary, even allowing for today's broadcasting and Internet technology, because of geography, contractual arrangements and commercial imperatives, it is unlikely that legitimate live broadcasts and Internet streaming will meet the needs of everyone on the planet, and because of this there will inevitably be a very significant potential audience whose needs will be unmet (or unmet at a price that they can afford or are willing to pay for), and many of these will turn to other services to view broadcasts of their preferred sporting events.

How are choices made in this market?

As described in the main study, classic economic theory postulates that, everything else being equal, demand will drift towards the lowest available price, and that the lower the price for any good or service the greater the demand is likely to be. Where the price of a desirable good is zero, or virtually zero, then demand can be expected to virtually unlimited.

Also described in the main study is the phenomenon that the digital piracy market, unlike every other sector that is subject to counterfeiting and piracy, not only has legitimate content providers at one price and illegitimate providers at a (generally) lower price, but also a category of content providers who are willing to provide (or share) content at zero or near-zero price. The understanding of this type of market calls for the extension of traditional economic models.[11]

In the sport rights case, the role of "lower cost" providers are largely played by the Unicast sites, which on the basis of either a general or pay per view subscription, will stream live events to subscribers. While these prices are likely to be lower than the legitimate services (who must charge full economic prices), as noted earlier the computer processing power and Internet bandwidth required to provide such services means that totally free Unicast streaming is unlikely, unless supported by third party advertising.

On the other hand, the use and content of P2P streaming sites are generally free to users, with their only obligation likely to be the joining of the peer-to-peer "swarm", that is, to act as uploaders as well as downloaders. The main reasons for this apparently irrational market behaviour (that is, the provision of content at zero price) are catalogued in the main study, but in essence these reflect reciprocity amongst participants, and other non-monetary drivers (such as social recognition within the on-line community). Indeed, the only "costs" that might be perceived by users of P2P sites would be the possibility of receiving some viruses or malware, or perhaps being subject to some action by the copyright owner.

The existence of these essentially free streaming services means that the sports rights owners, along with other rights owners whose content can be transmitted digitally, face competition of a kind not encountered during the extensive analysis of counterfeiting and piracy that result in physical goods (such as handbags, CDs and DVDs), which apart from the cost of production must then also be transported, distributed and sold.[12]

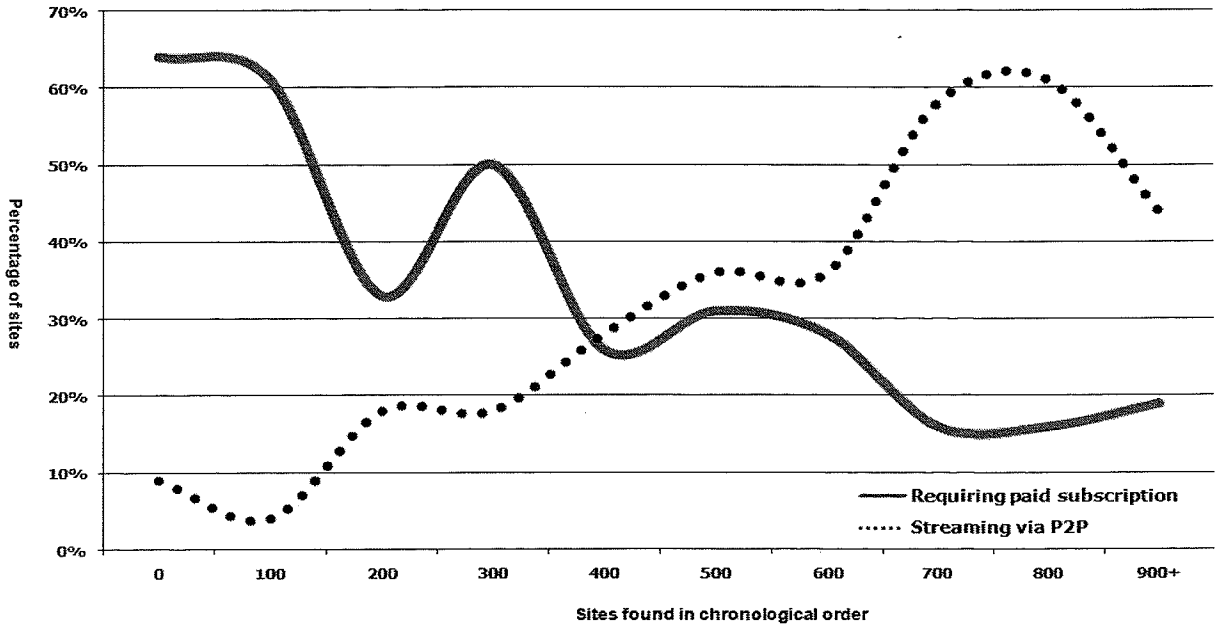
However, new economic paradigms or not, consumers generally tend to behave similarly, and the lure of streamed content at a low or even zero cost will inevitably attract customers, particularly where those consumers are unable or unwilling to access legitimate broadcasts or Internet streams. In keeping with normal market principles, all other things being equal, the greatest demand could be expected to occur at the lowest price offered, which with P2P streaming can be virtually zero.

Nevertheless, the fact that Unicast sites still exist means that price is not necessarily the only consideration, and again as described in detail in the main study, there are non-price factors that would drive demand. These could include legal concerns (a feeling of greater exposure in P2P streaming by virtue of being an uploader as well as a downloader), better quality (especially if P2P "swarms" are thin causing drop-outs and pauses for buffering) and a sense that paid sites are more professionally run and less likely to have malware embedded in their stream. The need for a certain degree of technical literacy in order to use the P2P networks, and perhaps even the belief by users that paid Unicast sites are legitimate, may also account for the continued existence of those sites.

It is also possible to conceptualise that similar factors (especially the issues of legality and quality) would be non-price factors that would encourage viewers to utilise legitimate broadcast and streaming services where these are available, rather than use the unauthorised alternatives.

The effects of these factors on the operation of the illegal sports broadcasting market can be seen in Figure 4.4, which shows the changing penetration over a three year period between paid Unicast sites (the falling trend line) and the generally free P2P sites that stream live broadcasts (the rising trend line).

Figure 4.4. Unicast *vs.* P2P streaming sites



Source: Sports Report (2008), "Background Report on Digital Piracy in Sporting Events", Envisional Ltd and NetResults Ltd.

Industry responses

In a live sports broadcast context, rights holders have a number of possible responses open to them to deal with the distribution of pirated content:

- Take civil action against the owners of the site that is providing the pirated content (including taking down, closing or suspending the site).
- Take civil action against those who receive the pirated content.
- If possible, employ technological responses to curb the transmission of unauthorised streams or downloads.
- Where this is available, work with law enforcement authorities to apply criminal law provisions against providers and consumers of pirated content.
- Work with governments on regulations at appropriate points in the Internet delivery chains to facilitate the identification of, and action against, those involved in the delivery and consumption of unauthorised content.

These responses recognise that in the case of digital piracy, unlike other forms of counterfeiting and piracy, there are no producing factories to close down, goods in transit to intercept, or vendors to apprehend at the sale points. In the case of digital piracy the available responses are generally limited to attempting to close down offending sites (which experience has shown can be reopened much more quickly than physical production sites) and efforts to seek remedies through legal recourse where this is available to the rights holders.

This range of responses is also available to the sports rights owners, but because of the short life span during which live sporting events have maximum value (essentially the live and delayed broadcasts) those rights owners have very narrow windows of opportunity in which to respond to the rebroadcasting/streaming of pirated content.

Taking down offending sites

With respect to both Unicast and P2P sites, rights holders can screen sites in advance of major events to search for those sites offering the streaming of those events, and attempt to either prevent the streaming of the particular event or close the site down completely. Because of the relatively lengthy legal procedures involved (presuming that the sites are in jurisdictions where such legal remedies are available) this discovery needs to be well in advance of the event in question; discovery during the live event or after it is over is unlikely to be productive.

As an example, it was reported in July 2008 that China's National Copyright Administration (NCA) had warned more than 20 websites for illegally streaming Olympic programming.[13] The report also noted that some sites had ignored the warnings.

Some of the problems experienced by sports rights owners attempting to minimise the impact of Unicast and P2P sites have been:

- Difficulty in locating those sites sufficiently far in advance to take successful legal action.
- Many sites are located off-shore from where the sports event is being broadcast, making legal redress more complex, difficult and expensive.
- Sites often located off-shore, in jurisdictions with weak or poorly functioning legal systems or rules.
- Ability of sites to set up mirror sites (in different legal jurisdiction) to thwart the effect of any successful legal action.

- Ability and willingness of sites that are temporarily closed or even permanently taken down to set up new sites (even in the same legal jurisdiction) which require fresh legal action to be taken.

Because of the short "shelf-life" of live sports broadcasts, action against offending sites needs to be taken as early as possible, and ideally before the live broadcast starts. This requires extensive and costly monitoring of web sites to identify those who could be offering unauthorised streaming video of the broadcast. As shown earlier, many of these web sites are very well organised and provide lists of upcoming events days or weeks in advance of the live broadcast, and because they are generally located in difficult jurisdictions (from an IP perspective) they appear to be able to continue to operate in a very open manner.

Other Unicast and P2P sites that offer unauthorised "live" content can spring up at very short notice, which makes it very difficult for rights owners to respond quickly, and generally any action to take the sites down before the live broadcast is difficult, if not impossible.

Some sports rights owners take a longer term view, and attempt to work with the largest sites to minimise the appearance of their content. An example quoted by the sports rights sector (Sports Report, 2008) was the US Major League Baseball (MLB), which convinced SopCast to ban its content on that site. This was considered to be a positive development, but the discussions to achieve that outcome were extensive, and the MLB content immediately appeared on a rival site, thus largely negating any redress that the MLB may have gained from its initiative. However, this at least demonstrated that some negotiation was possible with the organisers of P2P sites, and more significantly that those organisers have a measure of control over the material that is streamed over their networks. However, success varies by organisation, and other sports right owners have not had such similar success in dealing with Sopcast.

Legal action against facilitators and sites

While sport rights holders have a range of available legal actions against sites and services that facilitate illegal content, the reported experience of the sector seems to indicate that even in IP friendly legal regimes such action is expensive, time consuming, by necessity largely reactive and not always effective. Sports rights owners reported that in a recent 12-month period four sporting organisations spent over EUR 1.3 million in attempts to challenge unauthorised streams of their content (Sports Report, 2008), highlighting the high cost of such action.

Essentially the problem in seeking legal redress (compensation, damages, etc. – as opposed to simply taking down the site) is that these can be very lengthy before those responsible (if found, and this can be difficult) can face an appropriate court. This allows sites to re-establish themselves in different jurisdictions, where fresh action would have to be restarted. In the view of the sports rights sector their experience highlights the difficulties of legal responses that are by necessity country-based, whereas the Internet operates in a global context, with few boundaries, either physical or legal, to hinder their operations.[14]

A number of specific examples were provided to the study team, involving sports as diverse as football (especially the English Premier League and UEFA), Australian football and cricket, some of which are discussed in the next section. In each instance, a favourable decision after lengthy court action proved ultimately ineffective, as new sites were quickly re-established to continue the unauthorised streaming of live sports events. In this sense, the experiences of the sports rights sector mirror the experiences of other rights holders whose content can be transmitted through the Internet; that is, action is difficult when the providers of unauthorised content are ephemeral, reside/operate in different legal jurisdictions and where consumers are very numerous (and also live in different jurisdictions) and are frequently active participants in the distribution of that unauthorised material. This is the nature of digital piracy, and these are the characteristics that make this sector different from traditional forms of counterfeiting and piracy involving physical products.

Technological responses

As well as legal recourse there are some technical responses that could minimise the streaming of unauthorised content. One technique is *geographical blocking* (commonly referred to as geo-blocking), which is frequently used on the Internet when content providers wish to restrict access to their content to specific geographical regions. An example of this is the BBC iPlayer, which limits access to those whose IP addresses are located in the United Kingdom.[15]

While such blocking technology would be useful to minimise (or at least localise) the streaming of unauthorised content, this requires the co-operation of the offending site in the first instance, and this is unlikely to be the case unless action is backed by some more direct pressure such as a court order, or perhaps (as in the case of the MLB mentioned earlier) an agreement between the rights owner and the web site concerned.

Filtering is also possible on a broader scale, for example by governments wishing to limit access to specific web sites by its citizens, but this

enters into the very complex and sensitive field of personal freedom and rights, and apart from noting that this might be possible, it is not further explored.

Other technical responses, such as *traffic management and video fingerprinting* could also offer some scope for the sports rights sector to try to address the streaming of unauthorised content, but both have inherent problems. Traffic management is sometimes exercised by Internet service providers (ISPs) to manage their available bandwidth to ensure that it is not overwhelmed by large volume users (such as P2P streams). This traffic management tool is not really intended to block or slow down sites in response to possible IPR infringements, but could probably be technically feasible. Whether or not this may offer a further opportunity to prevent/ minimise the piracy of live sport broadcast is an issue for rights holders, ISPs and governments to address.

Video fingerprinting could be used to identify unauthorised copies, and apparently the technique is already being used in some music and video content, but the problem for the sports rights sector is that while it is technically feasible to track live video streams, there is no effective way of removing them.

In summary, while there are some nascent technical strategies that might possibly be used to minimise or prevent the illicit streaming of live sport events, these are not presently feasible, and would require considerable co-operation between governments, industry and consumers to deal with the sensitive issues associated with such responses. The recent involvement of ISP in some jurisdictions (for example the United Kingdom) to strengthen the opportunity of identifying and warning possible copyright infringers may indicate some movement in this direction.

Government regulation

From material provided to the OECD by the sports rights sector, there is a strong sense that Government regulations is seen as one of the best ways of ensuring protection for rights holders affected by digital piracy. There are two principal reasons for this perception. The first is that digital piracy is virtually a borderless activity, with the inherent problem that rights holders, providers and customers are likely to reside/operate in many different legal regimes, thus limiting the effectiveness of normal legal responses. In these circumstances, government regulation – especially if there were to be some kind of co-operation or consistency amongst governments in different legal jurisdictions – could be a way of facilitating responses and remedial action across those different jurisdictions.

Second, governments are often perceived as the only way of placing pressure on parties that have the potential ability to reduce the problem of digital piracy to act where they can, even if such action on their part is not seen as attractive or commercially desirable. In this context the Internet service providers are an obvious group for such attention, and their involvement in the battle against digital piracy (especially when this involves file sharing and P2P) streams) has been much reported. As this study was being written the announcement was made in the United Kingdom that ISPs had agreed on a plan with the music industry to address the problem of piracy. It was reported that under proposals by the UK government hard-core file sharers would be warned, and could see their broadband connections slowed.[16] A similar plan is currently under consideration in France.

No judgement is made here on whether this is an appropriate policy direction for governments and industry, but if this scheme does go ahead as planned (similar plans have been discussed in other jurisdictions) then this could also affect sports rights owners.

Specific industry examples

The sport rights sector made available to the OECD s a number of detailed examples of the experiences of specific sports in identifying and dealing with the piracy of live broadcasts (Sports Report, 2008 – from which much of the information in the following section was drawn). While the OECD was not in a position to verify the information provided in those examples, it has no reason to believe that they are not representative of the experiences of the sector. Only football, cricket and basketball are reflected here, principally because of the global popularity of these sports, their different characteristics and the range of data available for them. Other sports covered in the material made available to the OECD included baseball, tennis, Australian Rules football, rugby, motorsports, athletics, golf, American football and horseracing, thus indicating the very broad range of sports that are affected to a greater or lesser degree by unauthorised streaming of live events.

Football (soccer)

The experiences in football (soccer) have been reported by some of the largest leagues in Europe, including the Scottish and English Premier Leagues and Football League, Deutsche Fussball Liga (Germany) and Ligue de Football Professionnel (France), as well as football associations such as FIFA and UEFA.

Football is probably the most popular single sport in the world, and around 240 million people are reported to regularly play the game. FIFA estimated that the 2006 FIFA World Cup was shown on television in 214 countries across 376 channels with a cumulative television audience of 26 billion.[17] The magnitude of these numbers means that there is a very large pool of (frequently very passionate) supporters which would be a prime target for illicit streaming of live matches to meet the needs of those unwilling or unable to access legitimate broadcast and streaming services.

Monitoring of streaming sites involved activity across four major European football leagues, and the results are summarised in Table 4.1 below. The results for the Premier League and the German Bundesliga reflect season-long monitoring, while the Spanish La Liga, and the Italian Serie A comprised a snapshot of games across a single weekend.

Table 4.1. Sampling of illicit streaming sites affecting football

League	Monitoring period	Infringing sites	P2P-based	Unicast-based	Paid	Free	Viewers in China	Viewers outside China
English Premier League	2007-08 season	177	63%	37%	27%	73%	49%	51%
German Bundesliga	2007-08 season	85	96%	4%	10%	90%	73%	27%
Spanish La Liga	Snapshot during 2007-08 season	49	98%	2%	14%	86%	55%	45%
Italian Serie A		53	96%	4%	17%	83%	57%	43%
Average		*91*	*88%*	*12%*	*17%*	*83%*	*57%*	*43%*

This monitoring found that on average 91 infringing sites were found for each of the four leagues, although the Premier League appeared to face the worst problem, with 177 sites found by during season 2007-08 (barring the final weekend). The monitoring results indicated that a majority of all sites located were connected to P2P-based streaming, although the Premier League was subject to more attention from Unicast sites than the other leagues.

Significantly, the figures for infringing sites counted each located site once only; thus a portal site like MyP2P, which is likely to feature links to almost all football matches from the four leagues shown below was counted only once, despite providing links to many hundreds of individual matches. This of itself indicates the considerable number of streaming sites that were available to consumers, and correspondingly highlights the difficulties experienced by the rights owners to deal with them.

The sampled numbers also indicated that most viewers of monitored streams were based in China. While the distribution data was taken from only a small sample of P2P streams for each league, in the view of the monitoring company this reflected a large enough sample to show the large usage of such services in mainland China.

More specifically, the English Premier League found that during the 2007-08 season 177 different sites were located which contained or were connected to unauthorised streaming of matches. Of these, 122 (63%) used P2P methods to distribute the content, with the remaining 37% streaming direct through Unicast sites. Of the P2P streaming sites, 70 embedded streams into a web page, while 38 provided direct links to streams found on P2P streaming services or clients such as SopCast.

Compared to the other three leagues in Table 4.1, the Premier League appears to have a much greater problem with paid sites, where 27% of sites were accessible only after payment was made. This likely reflects the high level of demand for Premier League games and the realisation by owners of pirate sites that a section of viewers are prepared to pay for guaranteed access to Premier League games. In the context of the overall study these sites represent that segment of the market that exists between the legitimate broadcasters and those sites that provide (perhaps inferior services) at basically zero price.

As an indication of the impact of these illicit streaming sites, the site monitoring focussed its attention on the two largest illicit streams for an important match between the top two clubs in the Premier League in April 2008. The match was broadcast on the subscription channel Sky Sports in the United Kingdom and offered through various other broadcast means in over 200 other countries. Despite the availability of these authorised broadcasts, in total 238 000 viewers were estimated to have watched the game on the two SopCast streams.

A regional analysis of those viewers indicated that (consistent with the overall viewer location shown in Table 4.1) around 49% were located in China, with an additional 10% located in Hong Kong (China). The United Kingdom (home of the Premier League) comprised 13% of the viewers, with

other developed economies also registering significant numbers of viewers, indicating that the use of illicit streaming services is widespread.

The experience of the other leagues indicates some differing characteristics to those of the Premier League. The most obvious difference is that the proportion of Unicast sites is considerably lower in the other leagues, so that P2P streams are by far the preferred mode of streaming those matches. As a natural consequence of this, there are commensurately fewer sites that require some form of payment, so that most access is through free sites. Finally, the proportion of viewers in China for the other leagues is significantly higher than for the Premier League, with the German Bundesliga being the highest, with 73% of all its illicit viewers being located in China. These differences reflect the respective popularity of the different leagues and their power to attract viewers, which in turn dictates to some extent the potential for service providers to seek payment from those viewers, perhaps by providing a higher quality and more reliable service.

While Unicast and P2P sites attracted the greatest number of viewers, post-event downloads of copies of entire matches are also available through the Internet, principally through file sharing networks such as bittorrent and eDonkey. The tracking of individual matches (in late 2007) between well known and popular teams such as Manchester United, Roma and Barcelona, attracted downloads in the tens of thousands, rather than the hundreds of thousands recorded for live streaming of matches. This is consistent with the characteristic of digital products that they have a comparatively short shelf life, and that live sporting events have the shortest effective life of all. Nevertheless even if smaller in number these illicit downloads would still affect the ability of the rights owners to maximise their returns from delayed telecast, packaged highlights and subsequent re-showing of some matches as "classics".

Cricket

While football has universal appeal, cricket is interesting because while its spread is more limited, it is enormously popular in South Asia (particularly India and Pakistan) as well as the United Kingdom, the West Indies, Australia, South Africa and New Zealand. The absence of significant fan bases (except for expatriates) in mainland Europe, the Americas, the bulk of Africa and China means that the target audience is quite different from that attracted to football. However, this did not prevent the collected data indicating that cricket had become the sport most affected by unauthorised streams of live events, particularly in India and Pakistan where the sport is immensely popular.

According to monitoring data, in early May 2008, a SopCast channel for an Indian Premier League game saw over 120,000 viewers watching the game. The highest number of viewers ever recorded for a single P2P stream for cricket was more than 700 000.

The monitoring of a number of major international cricket series (including the 2007 Cricket World Cup) located almost 950 cases which involved the unauthorised streaming of live cricket. Of these, around 260 were dedicated servers used by streaming sites to provide a Unicast stream direct to viewers. A further 230 cases were sites which required a subscription to access the cricket content, while P2P streams made up 280 cases.

The ratio of Unicast to P2P over the period is greater than has been the experience in other sports, but the collected data also shows that the proportion of peer-to-peer streaming used in cricket is growing. In 2005, most streams located for cricket were Unicast, for which the provider often required viewers to pay in order to cover the cost of dedicated servers with enough bandwidth to support the direct streaming to possibly thousands of simultaneous users. However, over the last two years P2P technology has become the dominant method used to stream live cricket through the Internet. Not only has the technology become faster and easier to use, but P2P-based streaming services are almost always free at the point of consumption because the costs of re-broadcasting streams are so much cheaper. This is because the technology generally makes use of viewer's own upstream bandwidth to deliver the content to those within the stream, and there is little requirement for fast servers.[18]

Data collected also showed that streams broadcast with the SopCast service make up the majority (around 60%) of P2P-based live streams for cricket.

As a further development in cricket, there has been a steadily growing number of embedded streams, or links to streams found on free hosting services, particularly those connected to free blogging hosting, (such as Blogspot). The technology is simple, and it takes only a few minutes to set up and post content of any kind to a Blogspot-hosted page. There is no cost and financial penalty if and when a page or site is removed. Relevant sub-domains (such as *ipl-on-sopcast.blogspot.com*) are freely available which help promote each new site and page. Users post comments which update others as to working streams in real time as games progress. This user behaviour is consistent with the "community" and co-operative peer approaches that were identified by the main study as drivers for the distribution and consumption of digital content (both licit and illicit).

Basketball

The data collected for basketball focused on the American National Basketball Association (NBA), which as a national series differs markedly from the international reach (in terms of participation) of both football and cricket.

While the NBA is a domestic series, its global popularity has continued to grow. Games from the NBA are currently broadcast in more than 200 countries and territories across 41 languages. NBA content is extremely popular in China, where the NBA has more than 50 authorised telecast partners. The popularity of the sport in China has been furthered by the successful introduction of a number of prominent Chinese-born players into the league, so that according to monitoring results, an estimated 78% of viewers of unauthorised streamed NBA games are located in China.

Over the past two NBA seasons, 172 sites have been found which provided unauthorised streams of NBA games online. Of these, just under three-quarters (74%) were related to P2P streaming and most of these were directly embedded streams, while around 30% took the route of offering links to available streams. SopCast is by far the most utilised P2P service found to offer authorised NBA streams (around 60%).

Audience sizes on these streaming sites are very large. On 16 December 2007, almost 1.2 million viewers were registered on a SopCast channel that streamed the *Dallas Mavericks* vs. *Houston Rockets* game. From a large sample of those connected to this game, by far the largest proportion of viewers (78%) was located in China. This is the largest documented viewing for a SopCast NBA stream and was likely enhanced by the inclusion of Yao Ming, a Chinese-born player who played in the game.

Such a result, involving as it did a domestic game of basketball, emphasises the global nature of the Internet, and the appeal of some sports that go well beyond their natural borders. Prior to the growth of broadband Internet access and the development of associated streaming technology, it would have been impossible for such a seepage to occur from legitimate audiences for live events, and emphasise the unique challenges being faced by the owners of rights associated with digital content (not just sports broadcasters) when dealing with technological developments that greatly facilitate digital piracy.

As well as its very large recorded audiences to streamed games, basketball is also interesting because of its efforts to create partnerships with some of the most widely viewed sites distributing unauthorised streams of NBA games. From those partnerships, services have been created with both PPLive and PPStream to allow a large number of NBA games to be offered live, and

at no cost to the end user. Providing these legitimate streams of NBA programming may have had a positive effect as the average number of viewers of unauthorised streams of NBA games has declined since 2007, although the number of NBA games being streamed without authorisation has remained the same.

While strategic partnerships of this kind may offer an alternative way of dealing (at least in part) with unauthorised streaming of live matches, this model may not be available for other sporting leagues – particularly in the near-term when exclusive rights agreements have already been established for many sports in China and elsewhere.

Finally, the information provided with respect to the NBA notes that while China is the most significant problem area for the NBA, the problem of unauthorised streaming is not limited to there, and over the past year unauthorised streaming websites had also been identified in Europe, the United States, and Canada.

Conclusions

The purpose of carrying out a case study associated with the Phase II study on Digital Piracy is that it allows the detailed examination of the experiences of a particular sector affected by digital piracy to see how this actual experience reflects the analysis contained in the main study, as well as providing a practical snapshot of the experiences of a sector that distributes digital content in dealing with piracy.

The first point that becomes evident in the case study is that digital piracy can take a number of forms, and that each has its own particular characteristics. In the case of the sports rights owners sector, piracy takes the form of captured TV signals carrying live sports events that are then illicitly streamed through the Internet to customers around the world. Once captured, these events can also be made available subsequently by pirates as highlights or clips on a delayed basis.

A characteristic of digital piracy identified in the main study is that digital content has a much shorter shelf life than other material that is counterfeited or pirated, and the case study has shown that live sporting broadcasts have the shortest shelf life of all. This is because unlike other digital content (such as films, music, software, books, etc) which can have appeal for some time after they are first released, the maximum value of the live sports broadcasts (and perhaps other live events such as concerts) is when the live event is happening. Once the events are over, and the result known, interest wanes very rapidly, although they still retain a value to owners as highlight or archive material.

As is the case with digital piracy generally, technological advances (ability to capture TV signals, high-speed broadband connections and streaming technology) has enabled pirates to easily and cheaply stream the broadcasts virtually in real time, and at a quality which although not perfect is sufficient to meets the needs of the target audience.

This real-time competition creates particular problems for the owners of the sport rights sector, as they essentially have a very narrow window of opportunity to respond to those illicit streams, and this both complicates their responses and makes them less effective; taking down a site once the sport contest is finished is little comfort to the aggrieved party. In addition, the cost of such action can be very high.

As far as the providers of the illicit streaming services are concerned, these reflect the characteristics identified in the main study; that is as well as a lower cost supplier of the streamed event (in this case Unicast sites which generally charge a lower price than legitimate services), there are also many content providers who provide content (through P2P sites) at zero, or virtually zero, cost to the final consumer. This is an economic model that does not exist in counterfeiting and piracy of physical goods, where there is always a cost of production, transport and distribution, and where goods are therefore never provided to consumers at zero price.

Although there are exceptions[19] generally the cost of illicit streaming is kept extremely low by virtue of the P2P protocols, which use the bandwidth available to the many participants in the P2P "swarms" to facilitate the streaming of the live events. Where streaming is carried out one a one-to-one basis (by Unicast sites) the cost of powerful servers and bandwidth is generally recouped through subscriptions, advertising or both.

The capabilities of computers and the Internet, as well as allowing real time competition for the original products, also allow the production and distribution of the streaming content from sites scattered around the world; including in unhelpful legal jurisdictions. Similarly, customers (including P2P participants) can be located virtually anywhere in the world, which means that as with other digital piracy the rights owners face a global problem, but have only local responses available to them.

In other words, legal action available to the rights owners may have to be taken at different locations from where the sporting event in question is taking place, and this can make action much more difficult and expensive and probably also less effective, as it is difficult to track down persons who operate the sites and take action against them.

Also consistent with other digital content (especially films and TV shows), complex commercial and licensing arrangements and lack of adequate customer bases means that legitimate broadcasts may not be available in all locations where there may be fans wishing to see particular sporting events, which means that otherwise potentially legitimate customers may look for other ways to view those events, thus creating more consumers to sustain the illicit streaming sites.

Further, the ability of pirates to compete with authorised broadcasts of live sporting event in virtual real time (attacking the content at the time that it has maximum value to the rights owners), and in virtually any market in the world, means that the owners of sport broadcasting rights face circumstance that are particularly difficult, and in the current international climate lack the means to adequately respond to these threats.

In conclusion, this case study has highlighted that the findings and conclusions of the main study on digital piracy, and that the issues identified for the consideration of policy makers and industry, are also relevant in their specific application to this sector.

Notes

1. Reported on the unofficial London Olympics website *www.the2012londonolympics.com.*
2. Reported at *www.theglobeandmail.com* on 19 June 2008.
3. Reported in *uk.biz.yahoo.com* on 20 June 2008.
4. See the background report on digital piracy of sporting events (Sports Report, 2008).
5. See *www.sopcast.org* and *www.TVAnts.com* (latter in Chinese although mirror sites available, such as *www.tvants_ppstream.com*).
6. It should be noted that P2P technology may be used for both legal and illegal purposes, and references in this annexe are intended to refer to its use as a tool to distribute pirated content. Many legitimate services are adopting P2P technology to provide access to content, with the authorisation of rights holders, and these services are not the subject of this chapter.
7. Can be found at *www.myp2p.eu.*
8. In the course of a few minutes of research in June and July 2008, advertising was seen from Hertz, EDF (French electricity utility), Primagaz, Promovacances (French holiday site) and the University of Phoenix.
9. Information provided by NetResult in correspondence to the OECD.
10. While there is also demand for delayed telecasts, highlights and other packaged content, these are not specifically considered in this brief analysis.
11. See the main study for a detailed discussion of this economic model and the drivers that affect the behaviour of suppliers of pirated digital products.
12. For further details see OECD (2008), *The Economic Impact of Counterfeiting and Piracy.*
13. "Websites warned for IPR infringement on Olympic streaming in China": *http://english.sina.com/sports/1/2008/0707/170268.html.*
14. Information provided in private correspondence to the OECD.
15. See *iplayerhelp.external.bbc.co.uk/help/about_iplayer/termscon.*
16. See *news.bbc.co.uk/2/hi/technology/7522334.stm.*
17. See *www.fifa.com/aboutfifa/marketingtv/factsfigures/tvdata.html.*
18. Though at least the initial uploader of the content must have access to a connection fast enough to stream the live broadcast at a speed which does not induce pauses or buffering.
19. For example, Bensports charges USD 100 per month (*www.bensports.tv*).