

track



secure

protect

annual report Online Trends & Insight

2008

**business
intelligence**

BAY ■ TSP

track
secure
protect

monetization



Introduction

2008 saw the mainstream acceptance of streaming video, demonstrated by the explosive popularity of authorized streaming sites like Hulu and ABC.com. At the same time, P2P piracy still accounted for the majority of traffic across the Internet.

The owners of one of the largest torrent indexing sites, TorrentSpy, announced in March that they were shutting down in the face of ongoing litigation with the Motion Picture Association of America, which eventually won a \$100 million award against the site. Owner Justin Bunnell said he was shutting the site down to protect the privacy of the people who used it.

Daniel Dove, an administrator of the torrent tracking site Elite Torrents, was convicted in what the Justice Department called the “first criminal conviction after jury trial for P2P copyright infringement.” FBI, Customs and local law enforcement, participating in Operation D-Elite, shut down the site and arrested administrators in 2005 as part of a nationwide federal crackdown against the illegal distribution of copyrighted movies, software, games and music over P2P networks. Two other Elite Torrents administrators pled guilty and served five months in prison. Dove was sentenced later in the year to 18 months.

The Federal Communications Commission determined that Comcast had implemented technology across its network that throttled or delayed packets being sent to customers using P2P

applications. The issue first appeared in 2007 when the Associated Press reported that Comcast customers claimed that their network connections were being throttled and the company denied that it was doing it. The FCC decision was viewed as a victory for Net Neutrality advocates.

The European bandwidth management and analysis firm ipoque reported that the amount of bandwidth consumed by people using file sharing applications increased in 2008 over the previous year, though at a slower rate of growth. The company also reported that BitTorrent and eDonkey were the largest contributors and that if those protocols were shut down, the amount of P2P traffic across the Internet would drop dramatically.

With the growing enforcement focus on P2P networks, file sharers are shifting their attention to Cyberlockers and Usenet newsgroups. GigaNews, the largest Usenet provider, reported at the end of the year that upload traffic jumped to a sustained level averaging well over 400 megabits per second, representing more than 4.3 terabytes of new user generated content and discussions daily.

By the end of the year BayTSP reported that 15 studios were using the company’s Content Authentication Platform to identify where their content is appearing on user generated content sites and collecting business intelligence data.

Digital Piracy Statistics for Top Protocols

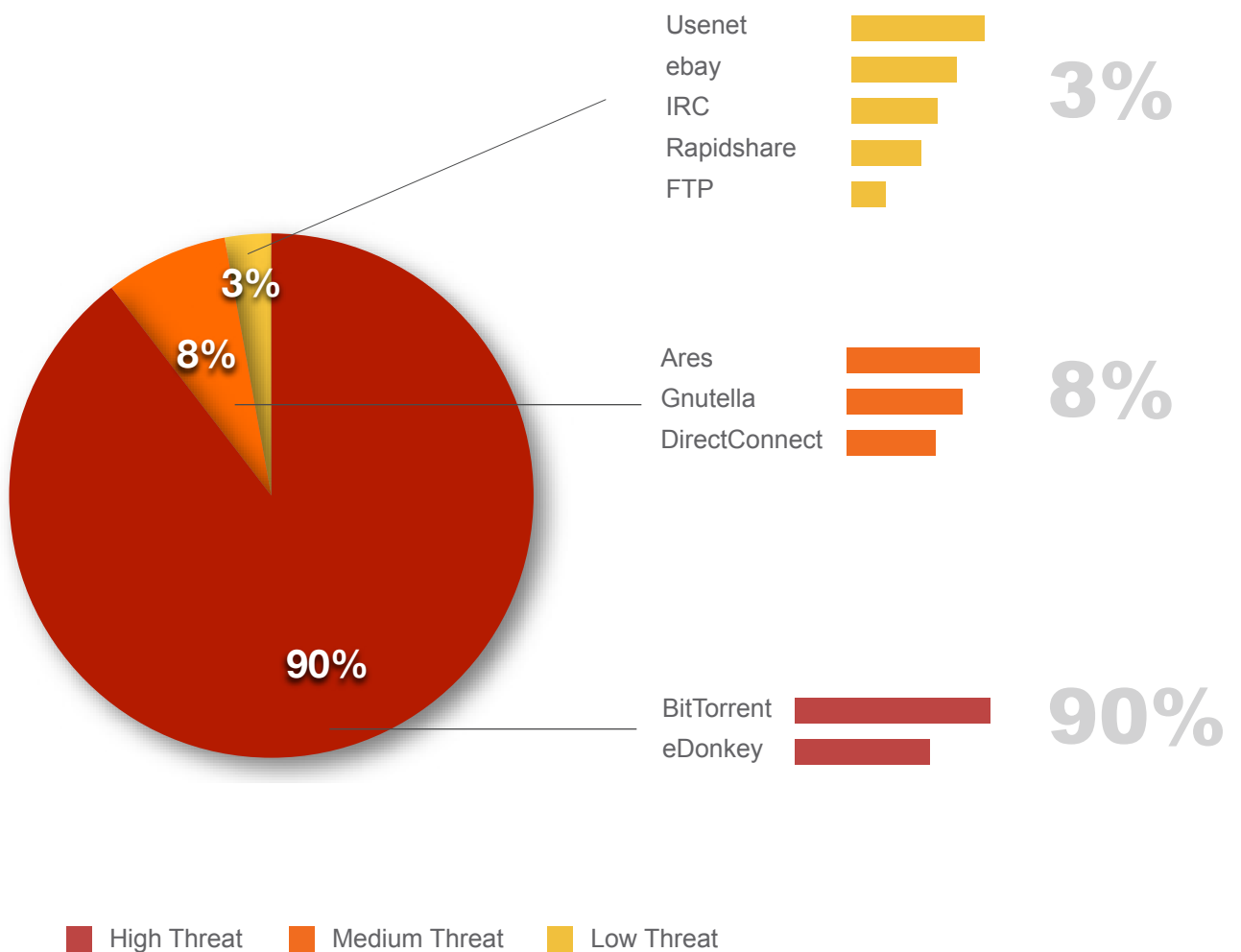
BitTorrent extended its dominance as the most popular file sharing protocol in 2008, according to data collected by BayTSP on the number of infringements of client content found across P2P protocols and user-generated content sites. BitTorrent surpassed eDonkey in 2007 and the two protocols accounted for the vast majority of copyright infringements of BayTSP client content. IRC and FastTrack have become increasingly obsolete sharing protocols during 2008, with both falling off the Top 10 list. Replacing these outdated protocols are user-generated content sites like Youtube, Mega video and Dailymotion.

2007 Rankings	2008 Rankings		Counts
1	1	BitTorrent	174,229,660
2	2	eDonkey	131,997,341
5	3	Ares	2,403,199
4	4	Gnutella	2,050,382
3	5	DirectConnect	1,057,170
9	6	YouTube	544,657
13	7	MySpace	414,324
n/a	8	Mega Video	195,491
14	9	DailyMotion	83,243
11	10	Usenet	56,566

Threat Level Breakout

BitTorrent and eDonkey expanded their dominance as the preferred P2P protocols for downloading pirated content, according to a threat level research project tracking unauthorized downloads of BayTSP client content. Second tier and older P2P distribution protocols, like Ares, Gnutella and DirectConnect, continued to decline in 2008 and account for close to 10% of infringement found during the year.

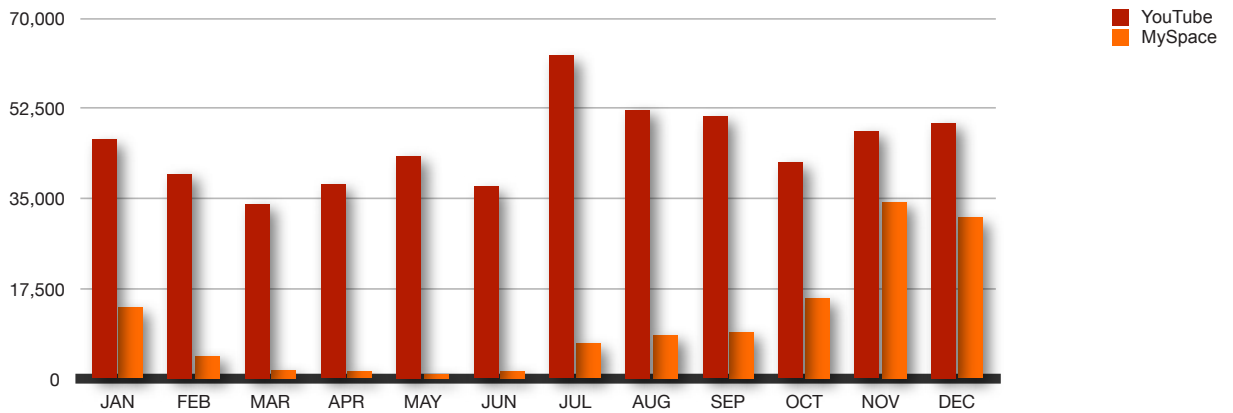
P2P



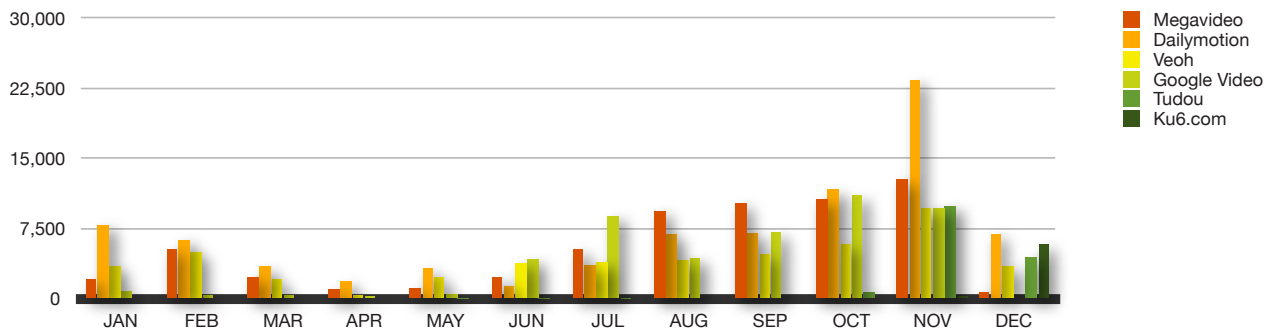
Youtube continued to have the highest number of infringements of BayTSP client content in 2008 and MySpace increased toward the end of the year. Infringements found on Google Video dropped substantially by the end of the year because they stopped hosting their own content. Stage6 disappeared completely due to potential copyright litigation and significant costs in keeping the site running.

Streaming

High



Medium



Top Countries

Spain, Italy and France – three countries with lax copyright protection laws – topped the list of countries identified as having the most infringements of BayTSP client content in 2008. The United States, which topped the list in 2007, dropped to fourth place, largely as a result of stepped up responsiveness by U.S.-based ISPs, accounting for nearly a 35% drop in the number of identified infringements.

**2007
Rankings**

**2008
Rankings**

counts

2	1	Spain	24,749,379
4	2	Italy	19,233,279
3	3	France	17,884,699
1	4	USA	8,116,302
6	5	UK	6,586,698
9	6	Brazil	5,973,286
5	7	Germany	5,731,959
10	8	Poland	4,152,861
13	9	Israel	3,655,253
7	10	Canada	3,342,072

Case Study: Downloads of Television on P2P

Television Tracked - One Title, One Week

BayTSP collected extensive intelligence data for a popular television asset. The purpose of this project was to develop new tools and methodologies that would assist in providing clients with a wealth of intelligence data related to user behavior and P2P usage. In this illustration, Spain continues to be a hotspot, hosting a combined 172,841 unique users for both protocols over the one week timeframe. As expected, BitTorrent median download times were substantially lower - hours vs. days - in comparison

to download times on the eDonkey protocol. The much larger number of users (and files) available on eDonkey over BitTorrent can be attributed to the nature of the protocol. Users on eDonkey tend to “permanently” share their collection of files whereas BitTorrent users tend to clear completed files from their client application after a period of time.

Top Countries [BitTorrent and eDonkey]

Rank	Country	Total Unique Users	Total Downloads
1	Spain	172,841	104,451
2	France	39,816	28,236
3	USA	15,955	7,459
4	Israel	13,492	9,672
5	Poland	12,267	6,877
6	Brazil	12,213	7,121
7	Italy	11,001	7,632
8	Australia	7,670	3,445
9	United Kingdom	6,670	2,839
10	Canada	6,581	3,366

By Continent

Rank	Country	Total Unique Users	Total Downloads
1	Europe	273,319	166,887
2	Asia	26,291	16,690
3	North America	24,192	22,472
4	South America	17,759	10,187
5	Oceania	8,301	3,710
6	Unknown	7,038	2,603
7	Africa	1,579	653
8	Arctic	193	114

Top Countries

[BitTorrent]

Rank	Country	Unique Users	Downloads	Median Download Time
1	Spain	39,791	17,405	19.68 hours
2	USA	13,957	6,229	7.2 hours
3	France	7,864	4,364	8.64 hours
4	Australia	6,684	2,622	10.56 hours
5	Sweden	5,638	3,721	8.4 hours
6	Canada	5,566	2,598	10.08 hours
7	Poland	5,469	1,966	6.96 hours
8	United Kingdom	5,266	1,814	6.48 hours
9	Romania	2,974	1,164	2.88 hours
10	Brazil	2,925	963	11.04 hours

By Continent

Rank	Continent	Unique Users	Downloads	Median Download Time
1	Europe	80,212	36,134	13.92 hours
2	North America	20,648	20,141	10.56 hours
3	Asia	7,982	3,035	13.2 hours
4	Oceania	7,187	2,808	10.32 hours
5	Unknown	6,920	2,514	10.8 hours
6	South America	5,237	1,760	13.92 hours
7	Africa	781	209	18.24 hours
8	Arctic	193	114	15.84 hours

Top Countries

[eDonkey]

Rank	Country	Unique Users	Downloads	Median Download Time
1	Spain	133,050	87,046	4.08 days
2	France	31,952	23,872	2.5 days
3	Israel	11,290	9,105	2.27 days
4	Italy	10,124	7,287	2.42 days
5	Brazil	9,288	6,158	2.37 days
6	Poland	6,798	4,911	3.12 days
7	China	3,611	2,224	2.08 days
8	Belgium	2,331	1,547	2.52 days
9	Germany	2,092	1,246	1.66 days
10	Argentina	2,029	1,480	3.36 days

By Continent

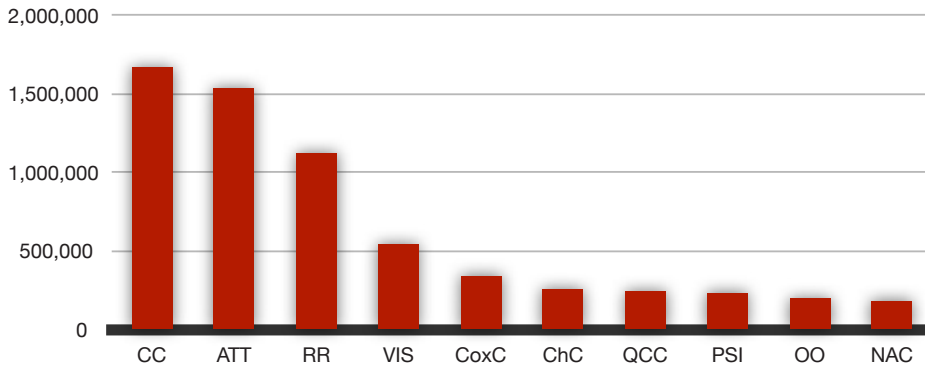
Rank	Continent	Unique Users	Downloads	Median Download Time
1	Europe	193,107	130,753	3.68 days
2	Asia	18,309	13,655	2.49 days
3	South America	12,522	8,427	2.72 days
4	North America	3,544	2,331	4.34 days
5	Oceania	1,114	902	2.45 days
6	Africa	798	444	2.31 days
7	Unknown	118	89	1.41 days
8	Arctic	0	0	N/A

Digital Piracy Statistics for Top ISP's

Comcast, AT&T, and Road Runner topped the list of U.S. ISPs identified as having the most infringements of BayTSP client content in 2008, each with more than one million apiece. Comcast has been the domestic ISP with the most infringements since Bay-TSP began collecting statistics in 2006.

2007 Rank	Organization Name	Total
1	Comcast Corporation	1,668,738
5	AT&T	1,534,733
3	Road Runner	1,123,918
7	Verizon Internet Services	541,009
6	Cox Communications	341,683
10	Charter Communications	255,417
24	Qwest Communications Corporation	242,454
13	Performance Systems International	234,997
11	Optimum Online (Cablevision Systems)	197,861
33	Net Access Corporation	182,919

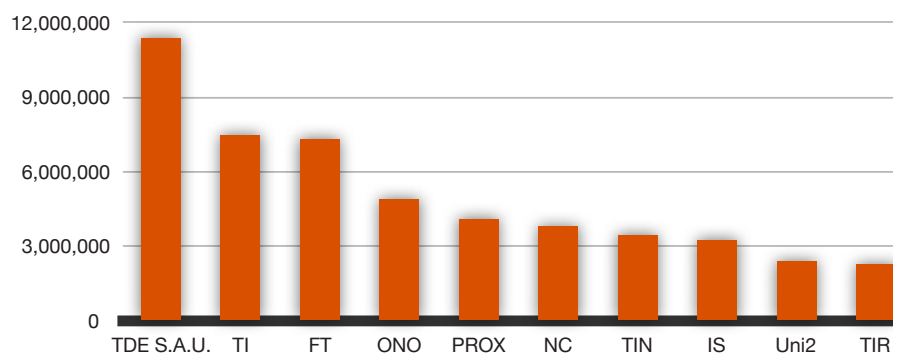
Domestic



Mirroring statistics collected on top infringing countries, the top international ISPs with the greatest number of infringements of BayTSP client content in 2008 were located in Spain, Italy and France. Since 2006, ISPs in Spain, France, Italy and Germany have alternated among the top ISPs with the most identified infringements.

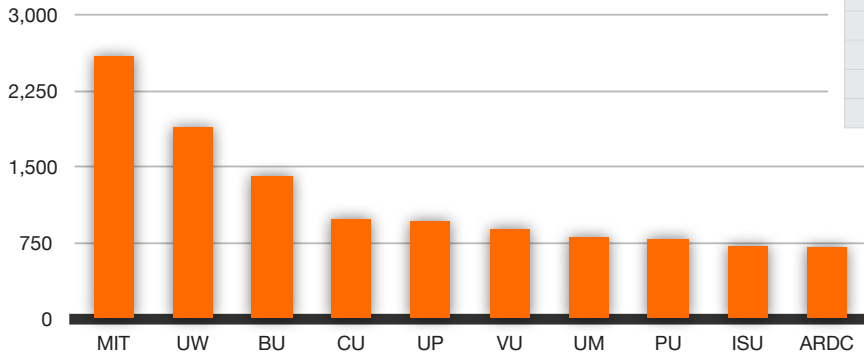
International

2007 Rank	Organization Name	Total
1	Telefonica De Espana S.A.U.	11,385,793
14	Telecom Italia S.p.A.	7,453,793
3	France Telecom / Orange S.A.	7,313,580
76	ONO S.A.U. / Cableuropa S.A.	4,900,332
4	Proxad / Free SAS	4,090,731
9	Neuf Cegetel	3,794,374
35	Telecom Italia Net	3,457,518
82	Infostrada SpA	3,244,605
152	Uni2 A.S.	2,384,456
14	Telecom Italia S.P.A. 0 Retail	2,266,158



Domestic

2007 Rank	Organization Name	Total
1	Massachusetts Institute of Technology	2,593
16	University of Washington	1,888
5	Boston University	1,408
2	Columbia University	985
6	University of Pennsylvania	961
14	Vanderbilt University	886
10	University of Massachusetts	803
4	Purdue University	784
26	Iowa State University	719
n/a	Amateur Radio Digital Communications	708

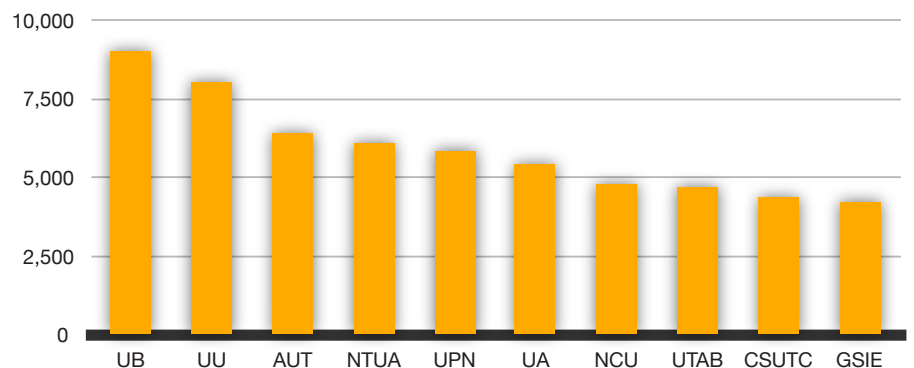


MIT, University of Washington and Boston University topped the list of domestic universities with the most infringements of BayTSP client content in 2008. MIT was the top infringer in 2007, but overall the number of infringements being found at domestic universities has held relatively steady since BayTSP began collecting statistics in 2006.

The University of Botswana, Aristotle University of Thessaloniki in Greece and National Technical University of Athens topped the list of international universities identified as having the most infringements of BayTSP client content in 2008 – at rates nearly four times the amount found among U.S. universities. The two universities in Greece also topped the list in 2007, but have demonstrated about a 10% decrease in identified infringements this year.

2007 Rank	Organization Name	Total
15	University of Botswana	9,027
4	Uppsala University	8,032
1	Aristotle University of Thessaloniki	6,407
3	National Technical University of Athens	6,096
5	University of Patras Network	5,847
2	University of Athens	5,413
8	Nicolaus Copernicus University	4,793
57	University of Tech and Agricult in Bydgoszcz	4,682
26	CKPOLSL 0 Silesian Univ. of Tech, Compu	4,372
n/a	Gothenburg Student Internet eXchange	4,227

International



Statistics on Site compliance

[The compliance rates for sites range from 0% to 100%]

compliance rankings

HIGH

Megavideo
Myspace
Tudou
YouTube

AVERAGE

56.com
Dailymotion
StageVu
Veoh

LOW

6rooms
Ku6
MetaCafe
YouKu

The average speed at which our takedown notices are responded ranges from under 12 hours to five days across the different sites.

BayTSP monitors how well that ISP's and video hosting sites comply with takedown notices when infringing content is found on their sites.

While Veoh and DailyMotion respond to takedown notices quicker, the total number of videos that Veoh removes is average compared against other UGC sites. Youtube and Tudou, on the other hand, have the highest takedown rates, but their response time is average compared to sites like Veoh.

56.com ranks average in compliance and response time. Youku is the least compliant and takes the longest to respond.

Prompt response

DailyMotion
MegaVideo
Myspace
Veoh

Average response

56.com
Tudou
YouTube

Delayed response

StageVu
YouKu



The Future

2008 saw the mainstream adoption of video streaming sites, the increased pirating of live events and the first steps toward monetization of authorized and unauthorized video distribution. For 2009 we see these trends continuing and maturing.

Mainstream acceptance of streaming video

Major networks and cable TV shows began hitting their stride in 2008, tapping into the demand for Web-based access to TV content. The winning strategy appears to include a mix of full length episodes posted online 24 hours to a week after initial airing, along with clips from shows that lend themselves to shorter pieces - like the Daily Show and many programs from Comedy Central.

The challenge facing broadcasters in 2009 will be balancing the public's desire to view shows online for free against the potential loss of revenue from people who cancel their cable subscriptions in favor of watching shows on their computers.

The issue becomes even more of a challenge when factoring in appliances like AppleTV, Boxee and other hardware and services that allow consumers to stream high quality video content from their computer to their HD televisions.

BayTSP has more than 15 customers using the company's Content Authentication Platform (CAP) to identify where their content is appearing on the Web, what is most popular and how many people are watching it, and using this business intelligence to craft their monetization strategies.

Increased monetization of online video

Websites like Hulu and ABC.com are showing record traffic growth - in part helped by mainstream television advertising.

[BayTSP has more than 15 customers using the company's Content Authentication Platform (CAP) to identify where their content is appearing on the Web, what is most popular and how many people are watching it, and using this business intelligence to craft their monetization strategies.]

NBC's advertisement for Hulu was one of the most popular ads aired during this year's Super Bowl.

Several popular user-generated content sites are under increased pressure to secure content deals and a condition of those deals typically includes a requirement that the content distributor implement some degree of content filtering and copyright protection.

BayTSP CEO Mark Ishikawa is in negotiation with several high profile UGC sites, discussing options for implementing CAP to help them identify content being uploaded to their websites and work with content owners to determine how users can interact with it and how to generate higher levels of revenue.

Increased pirating of live and pay per view events

Unauthorized online broadcast of live and pay-per-view events caught the public's attention with the launch of Chinese sites like Sopcast in 2006. With the advent of digital broadcasts and more consumer friendly technologies like MyP2P and Ustream. Individuals in the U.S. and abroad are rebroadcasting TV shows, sports, live concerts and pay-per-view events and, in some cases, making money from display ads appearing alongside the stream.

In response, BayTSP has launched a video streaming monitoring, enforcement and monetization service that identifies unauthorized video streams, takes action to have them shut down, and drives traffic to authorized, revenue generating streams. The service is already being used by sports leagues, networks and pay-per-view promoters in the U.S. and overseas.

BAY  TSP

**PO Box 1314
LOS GATOS, CA 95031**

**408-341-2300
WWW.BAYTSP.COM**