

# The User-Led Disruption: Self-(Re)broadcasting at *Justin.tv* and Elsewhere

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## ABSTRACT

The rise of videosharing and self-(re)broadcasting Web services is posing new threats to a television industry already struggling with the impact of filesharing networks. This paper outlines these threats, focussing especially on the DIY re-broadcasting of live sports using Websites such as *Justin.tv* and a range of streaming media networks built on peer-to-peer filesharing technology.

## Categories and Subject Descriptors

J.5 [Arts and Humanities]: Arts, fine and performing

## General Terms

Theory, Legal Aspects.

## Keywords

Television, streaming media, broadcasting, re-broadcasting, videosharing, filesharing, sports, peer-to-peer, *Justin.tv*.

## 1. INTRODUCTION

In many secondary markets for US television content (whether in Europe or elsewhere), broadcasters are going to increasing lengths to advertise that they now screen new episodes of popular shows at almost the same time as these episodes premiere in the US itself. This fact points to the impact of alternative – both legitimate and illegitimate – distribution channels for TV content. Filesharing networks now routinely bring hot new US series to their viewers' computer and TV screens well before the broadcast networks do; live streaming services offer sports, concerts, news, and other live content as it happens rather than as it fits the day's programming schedule. Mark Pesce has famously described the case of the 'reimagined' *Battlestar Galactica*, broadcast in the UK and bittorrented world-wide some months before its premiere in the USA, as a sign of the impending death of TV as we know it; at the same time, he has also pointed to the fact that widespread online distribution of *BSG*'s first series did not hurt (and possibly

even boosted) ratings for the show when it eventually aired on the Sci-Fi Channel [1]. It remains unclear whether such observations apply more widely, however – science fiction fans may be committed enough to re-watch a show's 'official' screening in order to encourage producers, but the same may not be true for more mainstream audiences.

What is evident, though, is that TV viewers are becoming more sophisticated, and are increasingly aware of and willing to explore alternative channels for accessing their favourite programming. Indeed, mere fast-tracking of shows from the United States is no longer sufficient if scheduling turns out to be inconvenient or erratic – even state-of-the-art personal video recorders (PVRs) are now often less convenient to use than on-demand download sites [2]. For viewers, the question arises: Why bother about programming and re-programming the PVR to record that 'hot new show' as it skips through various timeslots over the course of its season, if you can simply Google for torrents of brand-new episodes?

Industry faith in the lure of high-definition or interactive TV over grainy online video is also likely to be misplaced. For one, *YouTube* has demonstrated that audiences frequently value salience and immediacy over production quality (cf. [3]); committed fans outside the US, in particular, are more likely to download the latest episode of 'their' shows in whatever format it is available soonest than to wait until an HD, surround-sound version is finally broadcast by one of their local or national stations. Additionally, too, such high-quality formats are *also* increasingly being traded online; any cursory glance at Bittorrent sites will quickly find a wealth of HDTV-quality material. (This replicates a trend in audio filesharing, where many users have now moved from the lossy MP3 format to lossless audio compression formats such as FLAC or SHN.)

Such shifts are aligned with broader changes in media consumption patterns. While comparatively expensive and sub-standard broadband networks in some nations serve to delay these trends, some recent reports suggest a link between an increase in broadband use and a decline in the time spent in front of the television (see e.g. [4] for figures from Australia). Viewers' use of online alternatives to broadcast television, and their sophistication in identifying and using such alternatives, is only likely to grow further in future years, therefore.

## 2. DIY BROADCASTING

While it may be too early to predict a "casual collapse" [5] of conventional television broadcasting from the activities of such

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users, then, it is certainly likely that substantial transformations will occur, sooner rather than later. Streaming media and downloadable videos can no longer be considered as poor cousins of broadcast – indeed, it is possible to argue that television, even if enhanced through PVRs and home theatre systems, is failing to keep up with developments in online media. As noted, accessing broadcast content through streaming and download services is in some cases already more convenient than waiting for it to be shown on terrestrial television; additionally, online formats are now often more flexible for users to handle than shows recorded to DVD or HD recorders. Finally, of course, access and distribution through online services also allows for easy integration with related content, including social media sites for fans. Streaming media was once described as a second-rate, slightly gimmicky form of television; today, it can be argued that television has become a less convenient form of streaming media (see [2]; indeed, in January 2009 the *Wall Street Journal* reported that in the US, the popularity of PVRs has begun to decline in favour of online access [6]).

Virtually no staple genre of conventional television appears to be safe from such disruption. The continuing move towards the wholesale filesharing of TV series has already forced the hand of drama producers and broadcasters, who are increasingly offering their own, legitimate streaming and download options (witness for example CBS's 2008 roll-out of for-pay Bittorrent downloads and a dedicated *YouTube* channel, or the BBC iPlayer service). In the field of news and politics, most major news broadcasters are already offering live and on-demand video news broadcasts on a continuous 24-hour news cycle, of course, and the field is growing more crowded also through the entry of new players such as the US news parody *Daily Show* (which streams full episodes on demand) and *Current.tv* (which provides a space for quality user-generated video content). *Current.tv* is especially interesting also for its recent experiment in broadcasting the US presidential debates (and later the election night and inauguration) with a live overlay of comments from the popular social messaging service *Twitter* – enhancing the official video pool broadcast with user-generated content [7]. This innovative, interactive integration of television and online content (which is also evident in many other streaming and downloadable media services) clearly points to the advantage of online over broadcast media – no current mainstream 'interactive television' system is able to deliver a similar transmedia experience.

In the following, however, we will focus especially on the sports arena, where international licencing arrangements continue to limit the development of comprehensive live and on-demand streaming services, but where sports fans have increasingly taken matters into their own hands and are engaging in a form of 'guerrilla re-broadcasting' of sports events through Web-based services such as *Justin.tv* or p2p streaming media softwares like *Sopcast*.

## 2.1 Justin.tv

The do-it-yourself broadcasting service *Justin.tv* has become one important hub of such activities. Ostensibly, *Justin.tv* belongs to a group of videosharing Websites that also includes sites such as market leader *YouTube*, its competitors *Revver* and *Break*, and the Al Gore-supported *Current.tv*. Though differently organised and covering divergent market segments, ultimately each of these sites enables its users to share self-made videos in the hope of finding

an audience ranging from a small number of family, friends, and enthusiasts to a group of viewers measured in the millions.

*Justin.tv* departs from this established formula, however, by allowing its users not simply to upload pre-produced content, but to stream content live to its servers for immediate re-broadcast to any viewer interested in the advertised programme. Additionally, and importantly, *Justin.tv* also archives the DIY broadcast's contents for later on-demand viewing.

In addition to encouraging live-broadcasts of original, user-created content, these features have turned *Justin.tv* into a platform of choice for the (generally unauthorised) re-broadcasting of mainstream television content from around the world – and here, especially of live sports. The diversity of sporting interests around the world, combined with growing diasporic and expatriate communities in many countries, has led to a substantial interest in 'world sports' (however defined from each local perspective) – mainland Europe, for example, receives relatively little coverage of cricket, baseball, and American and Australian football, while the United States and Australia remain comparatively underserved in terms of free-to-air or mainstream cable broadcasts of football, motor racing, or some winter sports.

Such deficits are addressed by *Justin.tv* users following a 'gift economy' logic: they rebroadcast what sporting events are readily available to them on their local TV channels, and in turn profit by being able to watch the sporting events rebroadcast by fellow users from elsewhere in the world. This is particularly evident in the context of major sporting events – so, for example, while for viewers in many non-European nations the 2008 European Football Championship would not have been available live on their local mainstream television channels, they would have been able to watch virtually all matches live or time-shifted via *Justin.tv*, if at times with Turkish, Portuguese, or Mexican commentators, for example. (Indeed, the fact that for interested viewers, sports broadcasts remain meaningful even if the commentary is in a foreign language provides one reason that the re-broadcasting of sports programmes remains a favourite activity for *Justin.tv* users, compared to the re-transmission of other genres.) Additionally, the multiple re-broadcasting of events such as the 2008 Beijing Olympics even presents the possibility of a user-generated form of multi-channelling (by combining re-broadcasts from a variety of origins which focus on different sporting events taking place simultaneously) as an alternative to any in-house multi-channelling that may have been offered by the official Olympic broadcasters in a number of nations.

## 2.2 Peer-to-Peer Streaming Services

There may be a chance to curtail such unauthorised re-broadcasting of television content at least in part by pursuing *Justin.tv* as the provider of the media platform used for such activities – however, as the *YouTube* experience shows, such intervention by rights holders is likely only to slow, not to entirely eradicate unauthorised videosharing, and may significantly affect public perception of the rights holder's brand in the process. However, such opportunities to intervene virtually disappear for another popular television re-broadcasting model, which operates not through a central Website but through peer-to-peer video streaming services modelled on Bittorrent filesharing networks. Here, individual viewers switched on to a specific re-broadcast channel also become further broadcast repeaters

themselves, to the extent that their hardware and network connections enable this; the re-broadcasting process itself thus becomes much more difficult to trace and the re-broadcast network much more difficult to shut down.

Softwares used for such purposes include *Sopcast*, *TVU*, *TVKoo*, *TVAnts*, *PPLive*, *PPMate*, *PPStream*, and a number of lesser-known tools (see e.g. [8]); in addition to the software itself, however, it is usually also necessary for users to find information about which channel offered by these services will re-broadcast what content at which time. For that purpose, a number of 'broadcast guide' Websites have emerged; these are analogous to the Bittorrent search Websites which exist in the filesharing world, and offer not the re-broadcast content itself – as *Justin.tv* does – but simple 'magnet links' which Web browsers will pass through to the relevant peer-to-peer streaming software, and which serve to direct the software to switch to a specific content channel. (While such arrangements have yet to be tested conclusively in the courts, it is likely that under most legal frameworks, because of this built-in separation between the information required to access it and the content itself, these broadcast guides can claim immunity from any prosecution targeting unauthorised re-broadcasters – much as many Bittorrent search sites have attempted to do.)

One such broadcast guide is *MyP2P.eu*, which has established itself as a virtual clearinghouse for sports re-broadcasts from around the world (though with special focus on a number of key sports that have particular international appeal, including football and American football, baseball, cricket, basketball, ice and field hockey, golf, cycling, tennis, and various forms of motorsport). *MyP2P's* coverage of these sports is impressive – in its football section, for example, users may find a comprehensive collection of re-broadcasts of live matches from the English Premier League through to the Australian A-League and even to the Iraqi and Iranian Leagues.

### 3. INDUSTRY CHALLENGES

The emergence of such re-broadcast services (whether in the form of central re-broadcast platforms like *Justin.tv* or the various decentralised re-broadcast sharing networks) challenges the television industry on a number of levels. On the level of technology, it may already be too late to respond to the re-broadcasters' challenge: past experience with peer-to-peer filesharing has shown that any attempts to introduce technological measures to curtail unauthorised sharing have at best delayed the inevitable, while in the process significantly souring relations with audiences. Existing attempts to 'plug the analogue hole' (to prevent any unauthorised copying or retransmission in digital or analogue formats by implementing copy protection systems) have so far failed to show any discernible impact, and any digital copy protections have been circumvented swiftly by affected users. There are unlikely to be any effective technological solutions to prevent DIY re-broadcasting.

Perhaps the most significant challenge to the industry, however, is to its existing licencing arrangements. Current arrangements to maximise profit from developing a suite of broadcast licence arrangements across various geographic territories are critically undermined as content that is re-broadcast by viewers themselves skips such territorial borders; premium pay-TV or on-demand packages for niche sporting broadcasts will fail to attract

audiences who can access such content for free, if not necessarily legitimately, using alternative means. Ultimately, indeed, this may most affect pay-TV networks, which often use sports broadcasts as a key driver of audience uptake. Full play-by-play access to the Premier League, Bundesliga, or Serie A, for example, becomes significantly less attractive a proposition if it can be obtained without signing on to 12-month cable package contracts.

If technological or legal attempts to stifle user-led television re-broadcasting are unlikely to succeed, then other strategies are required to respond to the challenge of user-led re-broadcasting of television content. For originating broadcasters, indeed, there may be a need to consider whether such unauthorised re-broadcasting does in fact pose a problem at all – especially where the re-broadcast content is accessed mainly by audiences outside of their core broadcast footprint. Far from having a negative impact on their own operations, it may be seen as adding a further small but dedicated segment of viewers to their overall audience, and that segment may be addressed directly through advertising (which is likely to be re-broadcast live along with the programme content itself) or directed to the channel's Website as a potential market for advertising or other for-pay services and merchandise. (That said, where user re-broadcasting mainly serves to make available premium pay-TV content to non-subscribed domestic viewers, it does pose a far more substantial problem for the pay-TV service – but even here, such unpaid access to some re-broadcast content may eventually help attract new subscribers.)

For the rights holders to sporting broadcasts, user-led re-broadcasting poses different problems – their ability to maximise profits from rights licencing across different geographical territories is clearly disrupted by such unauthorised activities. It is useful here to distinguish between niche and mainstream sports: niche sports which are unable to attract lucrative licencing deals in all world territories (for example, niche motorsport competitions such as the A1GP or the IRL) may still profit to some extent from user-led re-broadcasting as it maintains and builds their following in geographic areas which otherwise would not have had access to broadcasts of their sport; ultimately this may create a viable market for that sport in additional territories. Already mainstream sports, however, are only likely to see their ability to negotiate profitable licence conditions undermined, as regional broadcasters can rightly point to the rights holder's failure to curtail unauthorised re-broadcasting into the region.

One solution to this problem for rights holders may be to engage more directly in online streaming of their sport. While such direct broadcasts are just as likely to be re-broadcast without authorisation by users of *Justin.tv* or the various peer-to-peer streaming softwares, it is nonetheless likely that – priced appropriately – many sports fans would be prepared to pay a small fee for direct, guaranteed, convenient and reliable access to quality live and archived broadcasts of such content, especially if proceeds from their subscriptions are shown to benefit the sport and its teams and athletes directly rather than for the most part merely subsidising various television intermediaries.

Similar models are now also being introduced in areas other than sport; several popular television dramas are now also available for direct or Bittorrent-style download from *iTunes*, *YouTube*, or the Websites of various US networks. This underlines again that the example of sports (re-)broadcasting as we have explored it here

stands for a larger trend towards user involvement in television broadcasting, and that the tools for re-broadcasting as we have encountered them are certainly also used well beyond the field of sports broadcasting. However, sports is likely to be at the leading edge of such developments for some time to come: for one, because (compared to drama or news) it provides the basis for a much more diverse, globally distributed network of audience interests in various sporting codes, leagues, and events that is particularly well suited to the gift economy-style peer-to-peer re-broadcasting of local television content which we have described; and second, because for committed sports fans the broadcasts lose little of their accessibility or salience even if the commentary that accompanies the transmission turns out to be in Spanish, Polish, or Mandarin. Indeed, sport broadcasts share these attributes most of all perhaps with music – but while for music (where watching a broadcast *live* is usually of lesser importance than in sports) effective mechanisms for the legitimate (e.g. *iTunes*) and largely illegitimate (filesharing) transmission of audiovisual content have already been established for some time, for sports such mechanisms have only now emerged in substantial form.

#### 4. CONCLUSION

Ultimately, then, it is likely that television sports will both decline and flourish: television *content* is likely to remain as salient as it ever was, and will be further enhanced by new models of accessing and interacting with it. At the same time, television *broadcasting* seems no longer able to keep up with the shifting interests of users, and is likely to be vulnerable especially as better broadband options become available. We are likely to see a continuing increase in the number and diversity of ‘television’ channels available to us through online means – not least also including both legitimate and illegitimate channels providing user-generated and user-distributed (that is, re-broadcast) content.

Likely to reap the greatest immediate benefits from such changes is the humble TV guide, however: especially given the growth in channels from around the world which are now becoming accessible to us, users are also increasingly in need of guides to and through the wealth of content available to them. Currently, even many committed Bittorrent users still find out about interesting news shows through promos on domestic TV; as the direct-to-download trend grows, they will need alternative sources for their entertainment news. Especially in the field of sports, some such guides (providing a list of global sporting events and links to where live streams may be accessed) are already emerging, as we have seen with the example of *MyP2P.eu*; in other areas, specific download sites, from Bittorrent directories to *Justin.tv* and sanctioned services like *YouTube* and *iTunes*, are

developing their own site-specific media guides. There remains a significant space here for new entrants, however – and with such new entrants also arrives a potential for new advertising and service models that may eventually turn out to be financially sustainable as well.

#### 5. ACKNOWLEDGMENTS

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