

Innovation Proposal

2014-2015 Knight Journalism Fellowship at Stanford

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Jan. 14, 2014

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While working on a news startup of my own the last few years, I've reached an alarming conclusion: There is no true equivalent online to the public airwaves.

I want to fix that. As a Knight Fellow at Stanford, I would want to take classes to obtain additional hacking skills myself, meet collaborators, and start building open-source tools to digitally replicate, thus preserve, the best aspects of our current system of broadcasting.

Offhand, content management and distribution of video-serving capacity seem like two particular areas that might be ripe ground to explore. But others may crop up during my fellowship. Like a reporter working on a story, I'll need to follow things where they lead.

To fully understand the problem -- and the good things I believe are being lost -- let's look back briefly at the broadcasting industry's roots in the first half of the 20th century here in the U.S.

Early on, we decided the airwaves should be a public commons. We'd license them to private broadcasters, but in turn, we'd require certain things so the licensees would operate in a community-oriented way. Hence we ended up with a mix of news, educational programming, and whatever other stuff the licensees might show purely for private profit. Through the mechanism of government, the public maintained a degree of leverage over the broadcasters because, in a worst case, we could always revoke the licenses on their means of distribution.

Flash forward to 2014. Video is coming into its own on the Internet, to the point that it is clearly beginning to cannibalize traditional forms of TV watching.

Overall ratings for both broadcast and its popular cousin, cable TV, have been falling steadily since 2011, abated only briefly for the Olympics, according to Citi Research.¹ Over the same period, usage of video streaming services online has jumped.

TV industry analyst Craig Moffett told the website Business Insider in August: "Cord cutting used to be an urban myth. It isn't anymore. No, the numbers aren't huge, but they are statistically significant." ²

In a subsequent report, Moffett and co-author Michael Nathanson said the U.S. pay-TV industry had its worst 12-month stretch ever through the end of the third quarter of 2013, including a net loss of 113,000 subscribers in 3Q alone.

The great transition to digital video has a lot of positive elements – for instance,

freedom from the natural scarcity of available frequencies on the electromagnetic spectrum as a de facto cap on the number of broadcasters. But I believe it also carries a big downside: The public is quietly losing control of the means of distribution.

The Internet itself is ostensibly based on open, community-friendly technical standards, of course. But it is crucial to recall that the Internet was built in its very early days for sharing text-based documents among researchers in government and academia.

Since at least the '90s, when the Internet became a mass phenomenon, the technical “cost” in terms of server space and bandwidth for a single user to transmit or receive a single document or piece of text has been essentially negligible. Thus, merely *having* open standards for HTML, HTTP, and TCP/IP has been good enough to establish a high degree of real freedom for users in publishing text online. Publishers of text have long been able to fire away at will, and any infrastructure they need has been free or cheap, with an abundant choice of providers.

Video is different. It's too dense as a form of data. Merely having open standards in place for digital video is nice, of course, but it is not enough. Even with the standards in place, users still have to deal with the very non-negligible issue of obtaining adequate servers, data pipes, and other infrastructure to actually transmit and receive video.

The number of services that can fulfill this high requirement, especially for small or individual video publishers, is still relatively limited and, in some cases, quite costly. Thus we live in a world of de facto private control of the “digital airwaves,” over-relying on just a few big corporate providers of infrastructure like Netflix and YouTube.

It's the full stack of video technology -- *including the servers and infrastructure* -- that must be open if we truly want to replicate the public airwaves online. To give just one theoretical example: A distributed video server at massive scale, with users providing spare processing cycles from their personal devices to other users, could provide robust video hosting without any corporate middleman.³

In the absence of such a setup, I believe we are already beginning to see very real, detrimental consequences for online broadcasters.

Take the example of Leo Laporte, founder of the popular TWiT.tv network, which produces several tech-news shows online. He's complained repeatedly on-air

about getting frivolous takedown notices on YouTube based on specious copyright claims -- for instance, a Brazilian TV station complaining about "infringement" on its rights to a short clip of Korean rapper Psy's song "Gangnam Style."

In YouTube's automated system, which essentially favors corporations over individual users, the first step in handling such disputes is to take down the content, no questions asked. Then, as a user, you can dispute the takedown after the fact via a lengthy, highly non-transparent internal process among YouTube staff.

The net result is that, for a news broadcaster like Laporte, free-speech rights are effectively limited. Whole episodes of his shows lasting an hour or more each are frequently pulled down because of disputes over seconds-long snippets of footage that the complainants probably don't in fact own in the first place. Even if they did, the excerpts should probably fall under the category of fair use -- a concept designed in part to protect news publishers.

"Not being able to post those shows on YouTube hurts us pretty badly," Laporte said during a December episode of This Week in Google. "I think it also should make people question whether YouTube should be part of their distribution strategy. If you get pulled off all the time, maybe you should look at something else. "

Another disturbing example: Netflix in recent years has invested in exclusive rights to several entertainment programs, including House of Cards, Orange is the New Black, and Lilyhammer. But where are the news shows? There are none.

Journalists who work at traditional broadcast networks, which are typically divided into news and entertainment divisions, sometimes grouse that senior management would be happy if they could just do away with the cost of news altogether to maximize profits. Before our eyes, Netflix is now building precisely such a company -- entertainment but no news -- unhampered by any public leverage to do otherwise.

After all, they're not using our airwaves.

I should say, I don't mean to pick on Netflix or YouTube or their peers. I use and

enjoy these services myself. I'm just saying, I don't want to live in a world where they are the *only* game in town providing significant capacity for online video, privately arbitrating issues like free speech and free press.

Finally, I'd point out that while my primary frame of reference throughout this proposal has been U.S. broadcasting, I believe that building better, more open technology for video would likely reap big benefits overseas as well. Distributed video servers, for instance, could be used to make end runs around censorship by foreign dictatorships, as well as support other use cases we haven't even thought of yet. The possibilities are vast.

Footnotes

¹ See <http://read.bi/1iCl8qP>

² See <http://read.bi/1iY9C9r>

³ Notably, some Stanford graduate students in computer science worked on a similar problem back in 2002. They documented their creation, the Simba video server, at <http://stanford.io/1d8hNw5>

While Simba was quite interesting for its time, it hasn't been actively maintained or updated on an open-source basis since, according to Satyam Vaghani, one of the system's creators. I had an interesting Twitter chat with him about Simba recently, viewable at <http://bit.ly/1cLegCW>