

Looking Into the Potential Issues of Video Broadcasting Over the Internet

An internet technology that I use regularly is Twitch.tv. This site has changed heavily over the time going to be a “simple” site where streamers can broadcast live video and others can view the broadcast, use a text chat, and follow the streamer. More features were introduced to the site like paid subscriptions, emotes, and a recommendation system. And like most things in this world it fell into the hands of advertising. Most recently the service has been bought out by Amazon. So let's say that I have just come up with this idea to create this video broadcasting site that no one else has created before, and I am not owned by a trillion dollar company. I am simply creating what Twitch.tv only after a few years of service when it took off massively and added many of the basic features it has today. The site is still the base broadcasting system but allows paying for subscriptions, handling what emotes you can use, and generating a simple recommended list after someone signs on. Basically there is just no fancy AI or tracking of unregistered users, yet. Well, what are some risks that this somewhat basic broadcasting system could have on the streamers, viewers, or potential society as a whole?

To start off the tallying of risks for this site, let's see what data we are using that is collected from our user base. This is simply asked by the Ethical OS checklist as what types of data do users expect you to accurately share, measure or collect? First, as our “A Gift of Fire” textbook talks about, I would want this site's collection of data to follow the Fair Information Principles as a way to protect the data that is collected and used from every single user of the site. For just the question about what the data is, this means that the site only collects the minimal data that is needed. For this point in the website's development, it simply keeps track of registered users' email, follows, subscriptions, and what streamers or types of content that they have viewed and searched for in the past. It is also possible that credit card information will be stored securely. This data is vital to email the user on important updates to the service and keep track of allowed emotes, home screen information like what subscriptions are live, and recommendations for other streamers that are similar to what the user has viewed in the past. Card information would be used if a user wants to subscribe to a streamer that view to gift them monthly donations. For streamers, additional information, such as what type of content they are currently broadcasting will be gathered in order for them to be recommended to views. Unregistered viewers will simply be tracking who they are currently viewing on the site to add to that streamer's view count.

Some additional concepts from the Fair Information Principles talked about in the textbook are the ideas to inform users about what and when data is collected and how that data is used. I described most of this before, but not how the user will be informed on it. Simply put, before registering an account, the user will be linked to our privacy policy, terms of service, and given a brief overview on what will be collected in order for users to know the details on the data collected. This last action normally isn't done on a website. Most just say do you agree to the terms of services and that is it. However, I think that sites should include a simple readable description of the terms and privacy policy. This basically guarantees that people are most likely to have some understanding of what is being collected, so they can accurately choose to use the application beforehand. As well, those registering will be warned that upon registering that they agree to the terms of service and data that may be collected on them. As well, to follow the Fair Information Principles, the site needs to include an option to opt out of any secondary data collection that isn't necessary for the function of the website. This means that each user can go to a list of settings for their account and disable data collection on things like search and view history that are needed for the recommendation system to function. However, data like follows and subscriptions are needed to show the user information about those streamers.

The past issue about informing data collection goes into these next questions from the Ethical OS checklist: Do your users have the right and ability to access the data you have collected about them? How can you support users in easily and transparently knowing about themselves what you know about them? One of the side readings from Vox.com that we had goes over the California Consumer Privacy Act (CCPA) that becomes a sort of de facto standard because of the interconnectivity of the internet. This act provides Californians the rights to access what categories of information are collected on them like the what the sources of the data are, the use and selling of the collected data, and specifics on personal information collected. I would need to comply with this law if I want to legally have Californians use my broadcasting site. This basically forces me to either collect information on where my users are from in the US and treat their data differently or simply treat all US users as if they are from California. It is incredibly more simple to just follow the CCPA and not differentiate the users. This means I will ultimately have to allow for users to have the right to access and learn generally all about what is collected on them from my site.

This next issue goes over the potential issues of users becoming addicted to the use of the broadcast site. The Ethical OS checklist asks how could you design a system that encourages moderate use? Can you imagine a business model where moderate use is more sustainable or profitable than

always seeking to increase or maximize engagement? First off, addiction to this site could very well be possible. However, it comes from both directions as an addiction to streaming or watching a streamer. People may stay up all night watching their favorite streamer or a streamer may be online for long periods of time each day. Let's look at potential business models for the website from an utilitarian perspective, so, according to our class lecture over ethics, we should weigh the harms and benefits that each model will cause and try to find what would cause the most happiness. First, a business that incentivised people to constantly be on the streaming service has many harms. The business becomes directly responsible for making people addicted and the harm caused, negative publicity, likelihood that more people could be addicted, and loss of current / potential advertisers. While this only increases view counts. This is very much a net negative. However, for a business model that encourages moderate use of the site there are many positives. The business decreases the chances of addiction, gains good publicity, and looks good to potential advertisers. However, this decreases view counts and potentially user counts, which will both hurt revenue. This may be a net positive unless the site couldn't afford any large loss in users and may shut down because of a heavy moderation system. This means that the site should balance the moderation of its site with revenue and view/ user counts. Ultimately, this means that the larger the site grows, it becomes more ethical while still profitable to incentive moderate use. To develop such a moderation system, the site could include a notification system that tells a user how long they have been online or tell them that they should take a X minute break. These could be used by both streamers and viewers on the website to help users recognize when they need to stop or stay healthy. These alert systems are just one idea, but like most additions and changes are likely to get some form of backlash and loss of users becomes of them on the site.

For the next potential risk that this site could allow is about the idea of how this site could be used in unattended ways. The questions from the Ethical OS checklist are the following: How could organized hate groups use your technology to spread hate, recruit, or discriminate against others? What does organized hate look like on your platform or community or users? For how hate could be spread, the simple answer is easily. This website is a broadcasting site that anyone can use and stream on for free to anyone that wants to watch. So anyone could start an account and start a stream talking about how he/she hates X or is anti-Y. This could grow over time and eventually some person has some anti-Z stream that is brought to hundreds of people. This becomes almost impossible to find that it is happening, if thousands of people are streaming and millions are watching all at once. So, to find these kinds of streams, the site would need a kind of report option to alert the site moderates that this

streamer is being discriminatory or hateful in some way. However, this would need more than just one person alerting this issue.

These actions by a streamer would be legal free speech but are objectionable. This scenario is similar to one talked about in lecture regarding a message board site for terminally ill patients. Then, what if someone's post telling all the patients they should just die already. I forget exactly what it said, but clearly that kind of post should be removed as it causes all kinds of harm to those patients. Possibly causing mass suicide among patients. However, for this issue regarding a broadcast where people intentionally choose to view and listen to the streamer is a little more iffy to straight ban the person. From "A Gift of Fire", there is a very small segment they set up as a guideline for both users and creators of websites to think of the potential risks and effects of creating and using the site. One of the guidelines from the list is to consider ways to minimize access by unintended users. I think limiting access to the streamer is a perfect idea, in place of banning, once the streamer is marked as "offensive/hateful" by enough people. The site could do a multitude of things to limit access by unintentional viewers: never recommend the streamer, label them as offensive, require registration to view them, set up age restrictions, or hide the channel from the internal search engine. Doing some of these ideas help ensure that people only go there if they mean to and minimizing their spread of discrimination while still allowing them to free speak on the service.

This final risk furthers the issue with unattended uses. The Ethical OS checklist asks how could someone use your technology to bully, stalk, or harass other people? I'm not actually sure how one could stalk someone when they openly broadcast online, but bullying and harassing could very well be done easily by both streamers and viewers. This could be seen by one or many angry viewer(s) typing in chat or a streamer targeting some person that they dislike. One answer to this is pretty simple, banning. What can be done? Should anything be done at all? Well, let's analyze this from a Kantian perspective, which we have talked about in lecture, and think of a rational solution to handle bullying on the site. Firstly, I think that having no ways to prevent and limit bullying / harassment is illogical, since it just propagates bullying further on the website. Thus not being the ethical decision as well. I think a simple yet rational answer is to allow streamers to block viewers in their chats. That way if they feel someone is bullying others or themselves, they can ban that user from typing in chat and end it right there. This works assuming the streamer is themselves acting ethically and not being a bully. So as an additional fail-safe, we can add a system like the hate speech one described earlier but for bullying streamers, following the guideline in "A Gift of Fire" to minimize access. We could then take it a step

farther to banning the streamer if they are seen to continue bullying individuals. I think these ideas are rational because very simple ideas to implement that work to an extent. They aren't perfect but they provide a way to stop the issues without adding many downsides except they could be used to get people banned or hidden on the site.

I only chose 5 risks that could be associated with a video broadcasting website from the Ethical OS checklist. These checked for possible ethical, privacy, intralegal, and social issues that could be generated from the use of the website by both the users and creators. There are numerous other possible issues that services like Twitch.tv have to deal with and manage like copyright infringement, spread of disinformation, and monetization issues. The real video broadcasting sites probably all handle issues in different ways from one another and far from how I think they could be handled. They may have advanced AI for determining recommendations and hiding "bad actors" that spread hate speech or disinformation. I took a simplified approach compared to how Twitch.tv works today. I looked more into how the system worked when originally developed and first took off rather than its modern adaptation that is owned and backed by Amazon.