An Overview of Technical, Financial, and Community Aspects of
YouTube Video Production and Gaming Live Streams

by

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Abstract

The audience of YouTube videos and gaming live streams is constantly growing. More than one billion unique users visit YouTube and watch over six billion hours of video each month. The video-sharing website offers entertainment in the form of videos uploaded by individuals and media corporations. Consequently, many of these video creators were able to turn their passion into a full-time job. By acquiring a partnership with Google, users are able to show advertisements on their videos in exchange for money. The purpose of this thesis is to give an introduction to the world of a professional gamer, someone who is able to make a living of producing YouTube videos and gaming live streams. The thesis will provide an overview of the technical equipment that is necessary to create videos and live stream video games. It will also show different ways to become a partner and how the content can be commercialized and turned into money. The main focus of the thesis will be on strategic management and planning, which includes building an audience, using analytics, social media and other strategies.
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1 Introduction

One billion unique users visit YouTube each month. Six billion hours of video are watched each month on YouTube. 100 hours of videos are uploaded to YouTube every minute.\(^1\) The statistics of the online video platform are impressive nowadays. YouTube grew over the last few years to become one of the largest platforms for sharing and watching videos. The success doesn’t just benefit the company itself. As of today, more than a million creators are partnered with the platform and commercializing their videos. Most of them are doing this as an additional form of income to their main job. However, for some people this is already more than just a part-time job. Thousands of creators have successfully turned one of their hobbies into a living, some earning up to six figures \([44]\). In addition to partners, advertisers use YouTube to target specific groups. YouTube is particularly good in reaching the audience between 18-24 years of age. As this was written, 94 of Ad Age’s Top 100 advertisers had run campaigns on YouTube \([20]\).

Video gamers are one group of people that started to use YouTube frequently. Strategies, guides and mechanics are being shared as well as entertaining videos and game reviews. The amount of gamers is growing and many of them are choosing to commercialize their time efforts and start a YouTube channel.

In addition to videos, live streaming is increasing in popularity. One popular live streaming platform for gamers is Twitch. The San Francisco-based company was established in 2009 and acts as a community for video gamers who are sharing their gameplay in real time.

According to Twitch’s 2013 end-of-year report, they had more than 45 million unique monthly viewers that averaged 106 minutes of video per day \([7]\). The report also revealed that each month 900,000 unique broadcasters stream on Twitch from a variety of platforms ranging from PCs to consoles. In the console segment, Microsoft’s Xbox One and Sony’s PlayStation 4 have integrated support for broadcasting on Twitch \([14]\). This is done by a free Twitch app that can be set up on the consoles to start livestreaming their gaming sessions immediately.

![Caught in the Web](image)

**Figure 1.1** Percentage of U.S. peak Internet traffic, Wall Street Journal, 5 Feb 2014.

\(^1\) http://www.youtube.com/yt/press/statistics.html
Figure 1.1 compares the peak internet traffic of the streaming platform to other popular websites. Similar to content creators on YouTube, some gamers have been able to turn their passion into a career opportunity [48]; through in-stream commercials, monthly subscription revenues, sponsorships and donations.

The author is an active member of this community and will incorporate his own experiences in this thesis.

According to Hamilton, Garretson and Kerne, the success of gaming video channels and streams can be attributed to a number of different factors [16]:

- Many people conduct research about games before buying them; streams and videos are for free and give them an overview of a game.
- Gamers like to socialize with others who are playing the same game.
- The comment section (YouTube) and chat (stream) provide a place for good discussions.
- Some gamers want to improve their skills and become better at the game they are playing. Therefore, they decide to watch some of the best players.
- They provide entertainment value (e.g. tournaments, parodies, etc.).

However, despite the numerous advantages, there are also risks involved. First, the ability to compete in games depends on reflexes and reaction speed. A comprehensive study by Thompson et al. analyzing the effects of aging on cognitive performances has shown that cognitive decline begins around 24 years [36]. As a result, in the mid-to-late 20s, players start to lose their ability to compete at the highest level. Second, games don’t last forever. If a channel is based around a specific game, the channel could lose its viewer base due to the online game servers being shut down. Third, parts of the revenue are being generated by commercials, which are heavily affected by the seasonal volatility in spending on advertisement [50]. Last but not least, players invest many years into their gaming career, leaving them with limited options after their career is over due to lack of education and work experience in a regular job. Different ways to overcome these risks and schedule a long-time career with gaming will be evaluated in Chapter 5.

This thesis will focus on different aspects of videos and live streams. Chapter 2 will give a brief introduction to the technical aspects. In Chapter 3, we will take a look at the business side, which involves partnerships and revenue models. The main section is Chapter 4, which provides an in-depth analysis of strategic development. The exploration involves ways to build an audience, marketing techniques, engaging communities and how social media can be used beneficially. Chapter 5 deals with the risks of being a professional in that business and what measures can be taken to minimize or avoid them. The thesis concludes with a summary and an outlook in Chapter 6.
2 Technical Aspects

Professional video creators and live streamers need specialized hardware and software to do their tasks. This chapter will provide an overview of tools that are needed in order to create high quality videos and live streams.

2.1 Peripherals

To record audio and transmit it, a microphone is needed. There are different types of microphones available. One method is to use a combined microphone-headset. A more professional solution is to use a studio microphone, which is a standalone microphone and often used together with a microphone stand and a shock mount. A shock mount is a mechanical fastener used to lower the voice levels from the surroundings without affecting microphone input. On studio microphones, professionals often use pop filters to eliminate the ‘popping sounds’ caused by the mechanical impact of fast moving air (see, e.g. [32]).

The author observed that headphones are frequently used when live streaming gameplay. If normal audio boxes are used, the microphone would also record the sound coming from the boxes, resulting in an echo. There are different types of headphones available. One type is a headset, which combines headphones with a microphone. However, the attached microphone is not needed if a professional studio microphone is being used. In that case people are also able to use standard headphones without a microphone attached.

Creators of YouTube videos often make videos in which they are simply talking to their audience and showing themselves. Therefore, having a webcam is required. In live streaming, it varies. Some players are reluctant to use webcams, e.g. to protect their privacy, while others decide to stream with a webcam in order to transmit visual emotion.

A capture card is a physical device that works together with the graphics card when recording game footage or during broadcasting. One of these products is the Avermedia Live Gamer HD card. The Live Gamer HD adopts the high speed PCI-Express interface to offer a smooth and fast data transmission. Capture cards are supposed to take workload off the CPU (central processing unit) and GPU (graphics processing unit), increasing the FPS (frames per second, see, e.g. [3]) while playing a game.

Figure 2.1 Avermedia Live Gamer HD, (Source: www.avermedia.com)
The streaming and recording of videos of games requires a PC (personal computer). There are no precise specifications to hardware, as it depends on the system requirements of the game and the desired quality of the stream. Parts that affect the performance are the processor, the graphics card, the RAM (random access memory) and the hard drive setup. For instance, SSDs (solid-state-drives, see, e.g., [31]) could be used to improve the performance during the video recording process.

2.2 YouTube videos

2.2.1 Recording software

For the recording of game footage, special recording software needs to be used. In this section we will take a look at the commercial version of Fraps (Beepa, http://www.fraps.com/). Alternative recording programs are DXtory (ExCode, http://www.exkode.com/), Camstudio (open source, http://sourceforge.net/projects/camstudio/) and Bandicam (Bandisoft, http://www.bandicam.com/), which offer similar functionality. Fraps is able to capture the screen and video for DirectX [23] and OpenGL [3] applications. DirectX and OpenGL (open graphics library) provide libraries which can be accessed via a defined API (application programming interface) and used by developers. In the context of video games they are used to adjust video and sound effects and manage the peripheral input. OpenGL is mostly used for rendering 3D applications and special effects.

Fraps delivers files in a special codec, which favors performance over compression, resulting in very large file sizes. In order to play Fraps video files, the ffdshow codec (see, e.g. [14]) has to be installed. Before version 3.5.0, Fraps used to split all footage that was recorded into 4 GB parts. The patch changed this, which added some level of comfort to the users, because they didn’t have to combine all the smaller files into one piece anymore.

The recording of high resolution footage requires free space on the hard drives. From the author’s experience, a typical 10 minute video recorded in a resolution of 1920x1080, can take up to 50 GB. The file size is directly dependent on different settings, such as the in-game resolution, in-game settings of quality, anti-aliasing and shadow details. In Fraps, users are able to select the amount of FPS they want to record. Recording 30 FPS is easier to handle for a computer than recording 60 FPS. While 60 FPS are smoother than 30 FPS, the difference is barely noticeable by the human eye (see, e.g. [3]) and the file size is significantly smaller in 30 FPS recordings.

To be able to record gameplay footage at a high resolution a good computer is required. Recording can be demanding for the processor and graphics card, often resulting in FPS drops while playing the game. The speed of the recording can be improved by SSDs. One method is to install the game in question to the SSD and use a regular hard drive for data storage. With this setup, the game will continue to run smoothly on the SSD and not be affected by the recording process on the other hard drive.

Fraps offers a free trial version. The life-long commercial version extends the maximum recording time from 30 seconds to unlimited, removes a watermark and provides buyers with free updates of every new release.
2.2.2 Video editing software

After game footage has been recorded, the next step is to edit and render the video. Even if the sole purpose of a video is to show 10 minutes of gameplay, the rendering-process is necessary due to the size of raw files. Rendering reduces the file size and converts 30 GB of footage into a single 500 MB file which can then be uploaded on YouTube.

One of the commercial programs to edit recorded video footage is Sony Vegas Pro [5]. Alternatives are Adobe Premiere Pro [18] and various open source software. The following list includes common tasks that are performed by editing software:

- Conversion from raw files into common file formats like .mp4 or .avi to reduce the size;
- Combination of several different clips into one long video;
- Adding special effects and transitions to the video clips;
- Variation of the speed during video clips (e.g. slow-motion effects);
- Highlighting special situations;
- Adding watermarks to protect the movie with copyright;
- Adding text to describe certain events in the video;
- Implementation of different layers, for example adding a webcam in addition to the game footage;
- Adding special music to the footage;
- Image enhancement options like adjusting brightness, red eye removal and exposure correction.

To summarize, the video editing process transforms raw files with gameplay footage into a multimedia experience with special effects by using the various tools of editing software.

Due to the high number of different editing options, it takes time to get used to the handling and tools of professional recording software. Additionally, the software is also an investment. Sony currently offers the product Vegas Pro 13 in three different versions\(^2\) on their website:

- Vegas Pro 13 Edit, $399.95 – Basic Vegas Pro 13 version;
- Vegas Pro 13, $599.95 – Includes additional software and plug-ins from Sony and other manufacturers;
- Vegas Pro 13 Suite - $799.95 – Includes everything from Vegas Pro 13 plus 25x royalty-free production music tracks and additional software for post-production activities.

The time of the rendering process is dependent on the power of the CPU, the length and resolution of the video and the file size.

\(^2\) [http://www.sonycreativesoftware.com/vegaspro/compare#pro](http://www.sonycreativesoftware.com/vegaspro/compare#pro)
2.3 Live streaming in gaming

2.3.1 Broadcasting software

From the author’s experience, the following software is needed to broadcast live content to streaming platforms. There are several options to record the screen:

- Use a screen region, directly selected in the broadcasting software.
- Broadcast the content of a capture card, usually the entire screen to which the card is connected.
- Use a program like DXtory to record the screen of a specific application (e.g. a video game).

One example for broadcasting software is the commercial program XSplit\(^3\), which is currently available in version 1.3. In XSplit different scenes can be configured, for example one for a gaming screen, one for a full-screen webcam and scenes for an intro and outro. The software is quite simple to use, but is CPU intensive. Another broadcasting option is the open source software OBS\(^4\) (Open Broadcaster Software), which is one possible alternative to the commercial product XSplit.

![XSplit setup example (scenes, webcam, timer, connection to stream platform)](image_url)

Figure 2.2 XSplit setup example (scenes, webcam, timer, connection to stream platform)

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\(^3\) SplitmediaLabs, XSplit. https://www.xsplit.com/

\(^4\) OBS, https://obsproject.com/
2.3.2 Streaming platform

Streaming platforms are websites and communities where many players interact with one another. Additionally, they provide the technical facilities (servers, bandwidth) and technologies that are needed for transmitting the streams. Those platforms act as a backbone of live distribution for video game broadcasters including professional gamers, casual gamers, tournaments, developers and gaming organizations (for an explanation of the different gamer types, see, e.g. [4], [19]).

A popular gaming platform at the moment is TwitchTV (further referred to as Twitch). The website attracts 45 million unique visitors every month [7] and has multiple dedicated servers in different regions of the world.

According to the company’s CEO (chief executive officer) Emmett Shear, Twitch has a goal to move from being just an online platform for PC gamers, to being on consoles and other platforms where many gamers get to experience gaming content [39]. On June 10, 2013 Microsoft announced at the E3 press conference, that they integrated with the ‘live-streaming site Twitch to allow live streaming and viewing from its upcoming Xbox One game console. The integration will allow Xbox Gold Live customers to instantly broadcast their game streams to their own Twitch channels, as well as view the streams as others.’[55] This integration seems to have benefits and synergy effects for both companies. Twitch might benefit from being able to reach out to console gamers who are going to be streaming and watching live streams directly on their console. In return, Microsoft would be able to get the name of their console and associated games out to a wider audience and could attract new players due to their games being popular on live streams. On the other hand, console games can already be streamed by using a capture card (see 2.1). The removal of a dedicated capture card might result into a reduction of video quality of the streams.

Technically, the console streaming will be done via the Twitch Broadcasting SDK (software development kit). The SDK allows Microsoft to connect their games to the streaming platform, giving players the possibility to broadcast their gameplay from within the game with only a few clicks. The advantage of the Broadcasting SDK is that it removes the existing barriers to broadcasting, because there are no further hardware or software requirements.

On Twitch people can create an account to follow channels. If they follow a channel, they will get automatically notified via an e-mail message when the broadcaster starts streaming on the channel. There is a ‘channels page’ that lists the broadcasters ranked after their viewer count. Additionally, channels can be found through the ‘game page’, where users first select the game they want to watch and then select their favorite broadcaster.

Current competitors of Twitch are Azubu, HitBox and YouTube live streaming. From the author’s experience, Azubu and HitBox haven’t penetrated the market aggressively yet and tend to serve a niche of viewers and broadcasters. YouTube has the financial backing of Google and could outspend Twitch in an attempt to become the number one live streaming platform. However, Twitch has certain competitive advantages, including an optimized chat system and the reputation of being the place to be for gamers and live streamers which they built over a few years [16, 34].
3 Business Aspects

Live streaming and creating YouTube videos takes effort and time. According to an interview with the live-streamer Jeffrey Shih [48], many people start those activities as a hobby, but eventually a point is reached where it takes so much time that they would like to monetize their efforts. This is usually done through showing commercials and ads on the content they have created. In order to be able to do this, people are required to sign partnerships with different networks. The purpose of this section is to provide an overview of the process of getting a partnership and of the different revenue models that YouTube and streaming offer.

3.1 YouTube videos

3.1.1 Partnerships

There are many different networks and ways to get partnered on YouTube. The first way is to be partnered directly by YouTube and use an individual Google AdSense account. Google AdSense is a provider of dynamic online advertisements (see, e.g. [35]). This is a viable way if the video creator is only uploading videos without copyrighted music, game content, etc. Examples could be make-up guides or psychological advice. However, trying to monetize the following content requires special licenses and partnerships (see, e.g. [28], [42]):

- Music (including cover songs, lyrics, and background music);
- Graphics and pictures (including photographs and artwork);
- Movie or TV visuals;
- Video game or software visuals;
- Live performances (including concerts, sporting events, and shows).

YouTube users who want to monetize this type of content need to be a member of a network that owns proper licenses for the distribution of this type of content. For example, many popular music artists are partnered under VEVO⁵, which owns the distribution rights for their music. In the following section, we will take a closer look on partnerships for the monetization of game-related video content.

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⁵ http://www.pcmag.com/article2/0,2817,2421399,00.asp
A partnership includes the following benefits:

- Customization of channel (individual banner, ability to link to other sites);
- Custom video thumbnails (a single picture of the video which is showing up in search results);
- Ability to monetize the videos;
- Gaming-specific: Ability to commercialize gaming videos without receiving individual permission from game companies.

There are several reasons why many gamers are deciding to join a professional gaming network. In most cases, the audio and visuals of games are copyrighted. People are not allowed to make money from someone else’s copyrighted content. This is where the gaming networks step in. They have specific contracts with many different gaming companies that grant them permission to monetize gameplay footage. YouTube has automated algorithms that detect the use of copyrighted material. As a result, gamers should look for a suitable network for them to be able to upload and monetize their videos legitimately.

Interested players are able to choose between multiple networks. Well-known networks for gaming related content are Machinima, Maker Studios, TGN (TheGamingNetwork), Curse and Socialblade. From the author’s experiences, TGN and Socialblade are for new, growing video creators and accept everyone with a subscriber base of a few hundred. The advantage of those networks is that it is relatively easy to join them and that they offer networking opportunities with other channels of similar size. The requirements to join Machinima and Curse are higher – they require applicants to have a higher subscriber and view count. Additionally, they allow you to monetize live streams on YouTube. However, due to the current popularity of other platforms (e.g. Twitch), most players choose to stream in different places. Maker Studios consists of multiple networks, the gaming-related ones are Polaris (formerly known as TGS, TheGameStation) and MakerGen. Polaris is their premium network where many of the most successful gaming channels are partnered with, whereas MakerGen is their entry-level division designed to promote and partner smaller channels.

It takes different steps to get a YouTube channel partnered by a professional organization. First, a player needs to apply to one of the networks. If they are interested in him, they will send him a contract and a tax form that the applicant has to sign and send back. Many of these tax forms are signed nowadays with DocuSign, a US-company providing electronic signature technology. Several networks are often proactively recruiting. This means that they are searching for video creators that are not partnered yet and offer them to join their network. In a successful partnership, the payments are sent to the partnered person each month by the online payment processor PayPal (see, e.g. [13]).
3.1.2 Revenue models

A main source of the revenue a partner makes is being generated by the display of commercials on the videos. YouTube offers overlay in-video ads and TrueView in-stream ads. The difference is that overlay ads are only a small banner on the bottom of the video and can easily be clicked away. TrueView ads are up to thirty seconds long full commercials and are shown full-screen. However, viewers have the option to skip the commercial five seconds into it.

In most cases, networks pay a fixed price for 1000 real views. Real views are viewers who actually saw a commercial. On average, around 65% of the total views of a video are commercialized views [20]. The rest is either using ad blocking software (see, e.g. [38]) or viewing on a mobile device that doesn’t have the functionality to show ads. AdBlock is an open source application for Mozilla Firefox, Google Chrome, Apple Safari and Opera web browsers. It prevents ads and commercials from being displayed, which directly affects the revenue of a YouTube partner. Since the release of AdBlock v2.6.33, AdBlock users have the option to whitelist specific YouTube channels. Once a channel has been whitelisted, no more ads will be blocked on that channel. This option allows users who don’t want to miss the functionality of AdBlock when browsing the internet to still be able to support content creators.

The amount of the income is referred to as a dollar amount per 1000 views. For instance, a contract could be $3 per 1000 real views, also known as a CPM of 3 (cost per mille). This is individually negotiated between the channel owner and the network.

In January 2013, YouTube reached out to a few selected partners and informed them of a subscription system. Channels with at least 1000 subscribers are allowed to monetize their videos and channels in a new way. For a monthly fee starting at $0.99, users get access to the videos. Content creators who use the paid subscription system have the option to offer parts of their content for free to attract new subscribers.

Another way to commercialize a channel is through merchandise deals. YouTube creators sign sponsorship deals with brands to promote the brand’s products in front of the creator’s audience. Those deals are conducted outside of YouTube and negotiated individually between the channel owner and the brand.

Moreover, popular creators on YouTube are also able to sell merchandise created by themselves to their audience. For instance, YouTube pioneer Philip DeFranco launched a shop to sell self-branded t-shirts to his viewer base [62]. The clothing designs were decided by his audience in a weekly show that he hosted on YouTube.

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3.2 **Live Streaming (TwitchTV)**

3.2.1 **Partnerships**

Partners on Twitch receive a share of the revenue generated from commercials shown during their streams. Partners are able to control the number and duration of ads. For example, some use a 30 sec commercial automatically every 15 min, whereas other streamers prefer to run them only once per hour (for example during a break or between games) and run them up to 3 minutes in a row. Additionally, they can turn on pre-roll stream ads, which are shown instantly every time someone joins the stream.

The company has several requirements that need to be fit before they partner a channel [57]:

- Average concurrent viewership of 500+ (not just a one-time peak);
- Regular broadcast schedule of at least 3 times a week;
- Content that conforms to the Terms of Service and DMCA (digital millennium copyright act) guidelines.

Popular streamers with an average concurrent viewership of 1000+ are able to offer a subscription service. For a price of $ 4.99 per month, viewers can subscribe to a channel. In return they get various benefits to improve their viewing experience. A subscription to a Twitch channel grants viewers a special icon next to their nick name for the chat and the ability to chat in the ‘subscriber-only’ mode, which is a mode that a streamer can turn on so only his paying subscribers are able to chat on his channel. In addition, the broadcaster is able to decide to restrict access to his VoDs (videos-on-demand) and make them accessible only to people subscribed to the channel. VoDs are previously recorded live-streams that are being saved on Twitch. From the author’s experience, the revenue from subscriptions is shared 50/50 between the broadcaster and Twitch. However, partners with a large number of subscribers are able to get a better deal which can be individually negotiated with the company.

Partnered channels on Twitch also have access to exclusive features. The company states on their website that partnered channels receive preferential treatment for front page and channel placements. The front page of Twitch features six different streams, rotating throughout the day and is an important source to generate traffic to a stream. Moreover, only partners are able to create highlights of their VoDs. A highlight is a small portion of a full stream to showcase exceptional action. Those highlights can be uploaded to YouTube directly from Twitch and also used for crowd-sourced promotion. Another partner-exclusive benefit is the stream delay option. This option allows broadcasters to delay their stream up to 15 minutes. The reason for delaying a stream results from streamers being ‘ghosted’ during their gameplay. ‘Ghosting’ occurs when the person the streamer is playing against is watching the stream while the game is in session. This grants the player access to information they would typically not have access to, giving the player an advantage over the streamer.
3.2.2 Revenue models

A source of income for streamers is the revenue generated by commercials. However, the drawback of relying on commercials as the main income is the high volatility in advertisement spending due to seasonality [50]. This means that even when a streamer averages exactly the same amount of viewers throughout each month of a year, his monthly revenue generated by commercials is still going to fluctuate. Therefore, streamers are trying to get the next-level partnership to be able to offer their viewers the ability to subscribe to their channel. The author noticed that streamers with a subscription option often try to push their subscriber count due to it being the most stable form of income for a Twitch stream. They sometimes display a ‘subscriber goal’ on their stream. For example, a streamer sets his goal to twenty new subscribers a day and mentions the name of every new subscriber on his stream.

By contrast, the author also experienced that some streamers, even top streamers, started to take a different approach. They decided to run a ‘commercial-free stream’, entirely supported by donations from viewers. A donation is money gifted from a viewer directly to the streamer. With this system, streamers escape the seasonal effects of advertising and have a higher potential for earnings. There are different reasons why people choose to donate money directly to a streamer. First, they do it because they want to support the streamer. Streaming can be a time-consuming activity and people want to help their favorite streamer be able to keep streaming. Second, streamers also use incentive systems to increase the amount of donations they are getting. For instance, every time a person donates a pop-up message will be shown on the stream. The message includes the pseudonym of the viewer, the amount of money donated and a special message that can be submitted together with the donation. Sometimes streamers also display ‘top donation of the day:’ permanently on their stream, which lists the person who donated the most money at that day. Finally, streamers also offer special benefits to their supporting viewers. Examples can be a spot on their friends-list in a game, which awards donors with the opportunity to play games together or to talk directly to the streamer. Another benefit could be access to a donator-only VoIP (voice-over-Internet Protocol, [30]) where viewers can speak directly to the streamer in a conference call.

Lastly, sponsors are frequently looking for competent streamers to represent their products. In a sponsorship, the sponsor benefits from the reach of the broadcaster. An example could be a requirement to show the sponsors logo on the stream or mention their products. Compensation is usually done in the form of sending hardware and games to the streamer. The sponsors regularly provide streamers with additional pieces of hardware to be given out to their audience in the form of ‘giveaways’. A ‘giveaway’ is a free-to-enter contest, where each stream viewer has a chance to win a prize. Additional viewers can be attracted to a stream by doing such contests and the sponsor of the contest benefits from the exposure. Broadcasters and sponsors are also able to negotiate a fixed monthly compensation for a permanent display of the sponsor’s logo on the stream. The amount of the compensation depends on the size of the streamer, which is measured in concurrent viewers, and the total number of hours streamed per month. Concurrent viewers are the average number of people watching the stream while it is live.
3.2.3 Acquisition of TwitchTV by Amazon

In August 2014, the live streaming business of Twitch suddenly turned into a billion-dollar business, when e-commerce giant Amazon acquired the formerly independent company for a price tag of $970 million [24].

Previously in May 2014, the American technology news and media network The Verge reported that Twitch was negotiating with multiple companies, including Microsoft, Yahoo and Google [53]. According to The Verge, Twitch was favoring a $1 billion buyout bid by Google’s YouTube at that time.

However, Twitch decided to sign a deal with Amazon instead. Amazon Games vice president Mike Frazzini stated that Amazon is heavily invested into games and that the acquisition will help the retailer to advance with their gaming business [24].

Seth Bardelas, head of agency development at the online-ad analytics firm TubeMogul indicated that the gaming platform Twitch is mostly popular with young male gamers, which is an attractive segment of Internet users to advertising companies [24].

Twitch CEO Emmett Shear disclosed some details about the deal in a letter to users: 7 “We chose Amazon because they believe in our community, they share our values and long-term vision, and they want to help us get there faster. We’re keeping most everything the same: our office, our employees, our brand, and most importantly our independence. But with Amazon’s support we’ll have the resources to bring you an even better Twitch.”

The author of this thesis observed an interview between Emmett Shear and Mike Frazzini, which was streamed on Twitch shortly after the announcement was made official [51].

Shear confirmed that Twitch will be teaming up with the AWS (Amazon Web Services) team to improve their video service. AWS is a cloud computing solution for video streaming [27]. Even Netflix, a provider of on-demand Internet streaming media and competitor of Amazon, is taking advantage of Amazons AWS technology instead of having own datacenters to provide their video content [45].

They are also evaluating different options to use Amazon’s roots as retailer. For instance, Amazon’s referral program, where referrers get a share of each sale could be used with broadcasters and make more money for all parties involved.

Shear and Frazzini also revealed plans of aligning Twitch’s global subscription service Turbo (see Chapter 5) with the Amazon Prime subscription service, which provides better shipment options for buyers on Amazon.

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7 [http://www.twitch.tv/p/thankyou](http://www.twitch.tv/p/thankyou)
4 Strategic and Community Aspects

4.1 YouTube videos

Millions of people visit YouTube every single day. They visit the page to follow their favorite online personalities and check out viral videos. What many people might not realize yet is that YouTube can be used to earn money.

Different factors are important when someone wants to become a successful video creator. This section is going to list relevant strategies and tips to become popular on YouTube and maximize the amount of views on videos and number of subscribers. A subscriber on YouTube is an individual who has subscribed to a YouTube channel to receive instant notification as soon as new videos are uploaded on the channel. The popularity of a channel is often measured by the subscriber count, the total number of subscribers a channel has.

Each video on YouTube has a title, a description section and a hidden section for “tags”. Tags are keywords and have an impact on the listings of the YouTube search (see, e.g. [1]). Figueiredo et al. analyzed which mediums generate most traffic on YouTube videos [9]. Their study has shown that “[...] search and internal YouTube mechanisms are key mechanisms through which users reach content on YouTube.” Similarly, Oliveira et al. verified video search being the main method on how content on video sharing websites is reached [29]. Therefore, certain techniques and strategies should be used to optimize the title, description section and tags for videos on YouTube.

From the author’s experience, the emphasis should be put on keywords that are relevant to the content of the video, but not overused. This means that general keywords like ‘gaming’ or ‘guide’ should be avoided, because they are frequently used and produce a high number of search results. One tool to research suitable keywords is the Google Keyword Tool [11]. It lists the amount of monthly searches for specific terms. For example, the search term for the video game ‘Diablo’ lists 20,400,000 monthly searches (October 2014). This signals that there is a high amount of competition for this term. This is the reason why titles and keywords should be extended. If the video is about a guide on how to make gold in the video game, the keyword ‘Diablo Gold Guide’ could be used. The monthly search requests for this term are only 8,100, which demonstrates that there is less competition for this term and it will be easier to rank high on YouTube search results. Furthermore, the description of a video should not just be made of lines like ‘I hope you enjoy watching this video!’, because such a statement wouldn’t contribute anything to the ranking result. A better alternative would be to describe the main elements of what the video is about with a focus on relevant search terms.

YouTube also offers the option to provide tags for a video. Those should be single words that are relevant to the video. Even though there is no limit to the number of tags a video can have, according to Jarboe there shouldn’t be more than 5-10 [20].

A common practice by some video creators has been to copy tags from popular videos and use them on their own videos [61]. According to Google, users copied tags in order to “profit off the
back of a popular video by copying them across their own videos”. To prevent the misuse of tags, Google decided to make the formerly public video tags private. As a result, with the tags now being hidden, users have to rely on their own tags and marketing strategies to get a good placement of their videos in the search engine.

Another way to bring attention to videos is to be an active user in the YouTube community. Commenting on similar videos can lead to new people checking out the channel and watch videos in return. In addition, every YouTube account has a so called “feed”, which enables all subscribers of one account to see the activities of the user they are subscribed to. Some activities shown in that feed are new video uploads and likes by the broadcaster. If a broadcaster likes his own videos, they show up in the subscribers feed list multiple times, which increases the chance of subscribers to discover and view the video.

An alternative approach to increase the viewer and subscriber base on YouTube is to be an active member of the community. If the YouTube channel is about a certain video game, posting in forums and the subsection of Reddit, one of the largest community websites worldwide, can increase the number of views on the videos (for information on Reddit, see, e.g. [25]). The author recommends that forum posts shouldn’t mainly be about advertising a video, but more about contributing value to discussions. That enhances the credibility of the poster. The signature, a user-defined message which is added to all contributions of a forum user, could be used to place a link to the own video channel. In addition, editors of forums are looking to feature good and relevant content on their main site, for instance on a gaming news portal. If a YouTube user is able to build relations with the owners of such communities, it is very beneficial due to the fact that often thousands of people visit the front-page of a related community website.

The duration of YouTube videos is important as well. One the one hand, videos should provide in-depth content, but on the other hand they shouldn’t bore viewers with too much information. If videos are too long, viewers close them. If they are too short, the credibility might not be high enough. According to ComScore, the duration of the average online video is 4.4 minutes [40]. Moreover, the internet video analytics company Wistia reported that fewer than 60 % viewers are still watching a video of 4-5 minutes, compared to 75 % which finish a 1-2 minute video [41].

From the author’s experiences, the following concepts should be considered when deciding on the length of a video:

- If there is a way to transmit the same message and content in less time, it should be done.
- Due to the decline of active viewership throughout a video, the highlights and key points should be addressed at the start of a video.
- If a video would be very long, the YouTube user should evaluate if splitting the content of the video into multiple videos is an option.
On the other hand, if it takes a certain amount to deliver a video with high quality of content, the duration of the video should not be cut. It is important to not leave any relevant information out of the video.

The frequency of video uploads is of equal importance. It is often recommended to keep a consistent schedule for uploading videos [20]. One or two videos each day would be a good start. It would even be helpful to stick to the same times each day, for example one video in the morning and one in the early afternoon. If the videos are in English and the subscriber base is from many different countries, the time usually doesn’t matter that much because views are coming from anywhere around the globe. However, if the YouTube channel is only producing German videos, then the videos shouldn’t be uploaded in the middle of the night, but rather in the evening, where most people are active in front of the computer. The reason for this is that users are usually subscribed to more than one channel, and tend to check out the most recent videos first.

Once a video has been uploaded, additional features can be added to it. Annotations can be used to post-edit a video by inserting speech bubbles, links to other videos or links to a channel subscription. The annotations will be placed on top of the video, and usually contain text or clickable links. Another feature is the use of captions, which benefit viewers with hearing disabilities or viewers who are not native speakers of the language. Viewers can then opt-in to make the subtitles visible or not.
4.1.1 YouTube analytics

A central method to gather data about the audience is to analyze the analytics YouTube offers. From the author’s experience with his own YouTube channel, the following information can be found in the analytics:

- Number of views per video and ranking;
- Demographic info (gender, age, location) of viewers;
- Development of the subscriber count and video likes;
- Audience retention per video;
- Traffic sources;
- Playback locations.

The overview section shows the most essential performance indicators of a YouTube channel. Figure 4.1 shows an example of an overview screen on a channel with roughly 5 million views and 30,000 subscribers.

**Figure 4.1 Overview of YouTube analytics (Source: www.youtube.com, channel analytics)**
In Figure 4.1, the demographic section illustrates the gender, location and age of viewers. It is important to take into consideration that not every user registers with accurate information on personal details on social platforms (see, e.g. [10]), but if the amount of viewers is high enough, the data tends to become relatively accurate. The screenshot below represents the demographic distribution of views for a gaming related channel.

![Demographics of a video gaming channel](Source: www.youtube.com, channel analytics)

**Figure 4.2** Demographics of a video gaming channel (Source: www.youtube.com, channel analytics)

Due to the nature of this YouTube channel, which is based on producing video gameplay guides and mathematical analysis of video game concepts, the percentage of male visitors is relatively high in comparison to female visitors. Moreover, because the content is in English, most visitors are from the United States. This information can be used to tailor videos for the relevant audiences. In addition, Google AdSense is using this information to target their commercials to the right audiences (see, e.g. [35]). For example, viewers of gaming videos will get ads about new game releases and viewers of baseball videos will get sport related ads.
The audience retention is another useful statistic that is offered for each video. It shows two different graphs – one illustrating the absolute audience retention and the other one the relative audience retention. The absolute audience retention shows the span of the entire video, and how many percent of all video views are watching at any given second. This information can be used to see at which point people are leaving a video, for example either because a controversial statement has been made or because of a loss of interest. It also shows certain passages with peaks which users watch multiple times (by rewinding the video) – this points out interesting moments of the video. By contrast, the relative audience retention shows how the video did compared to other videos of similar length.

![Graph showing audience retention](image)

**Figure 4.3** Audience retention of the video ‘Duping in Diablo 3, Gem Prices & Manticores (Source: www.youtube.com, channel analytics)

The category ‘playback locations’ shows with which medium people were watching the video. Data based on the authors YouTube channel shows that the largest amount of views is generated by users visiting the YouTube website via computers and notebooks. However, in recent years mobile devices such as smartphones and tables are more frequently being used to watch videos. The third way to watch videos is through embedded players on other websites. YouTube allows webmasters to embed a YouTube video directly on their website. Depending on the status and content area of the uploader, the content will be shared by related websites and blogs.

Traffic sources represent how people got to the video. Notable traffic sources are the YouTube channel page, the subscription module, embedded players on external websites and the YouTube video suggestion feature. This feature suggests similar videos directly after watching a video.

Lastly, the analytics section also shows engagement reports. Engagement in this context means actions taken by users. This can either be subscriptions or unsubscriptions, likes and dislikes, favorites, comments, shares and annotations. For all videos, each of those statistics is illustrated. The content creator is then able to identify successful videos that resulted in a high number of new subscribers and discover videos which were less successful than other videos.
4.2 Live streaming

Twitch is a live streaming platform oriented towards gaming [16]. Internal analytics state that there are more than 45 million unique viewers every month on the platform [7]. On Twitch, interested people are able to watch video gamers in real-time playing computer or console games. E-sports events, where the best players compete against each other often attract multiple 100,000 viewers on Twitch. But not just e-sport events, interviews with game developers or presentations of new games are being streamed. Nowadays, many ordinary gamers are broadcasting on Twitch, and some of them are even able to make a living doing that.

4.2.1 The partner program & donations

Once broadcasters reach a certain number of concurrent viewers each time they are streaming, they are able to become an official partner of Twitch. This gives them the ability to run commercials and get paid for them.

There are several advantages and disadvantages when running commercials. The income directly correlates with the numbers of people watching an ad. This means if a broadcaster manages to grow the viewer base, the earnings from commercials will be higher. Additionally, it is easy to run commercials during breaks or use a bot to run commercials automatically every 15 minutes for example. However, nowadays commercials aren’t as lucrative anymore as they once were. As discussed in chapter 3.1.2, an increasing number of internet users are using an AdBlock these days. Those users won’t see a commercial and also won’t contribute to the broadcasters’ ad revenue. Other problems could be that users switch to another streamer if they get irritated by the number of ads. For instance, if ads are being shown automatically every 15 minutes, interesting gameplay content could be missed which would also negatively impact the experience of viewers. Therefore, the use of commercials is not without controversy and other methods to generate revenue should be considered.

One example of an alternative method is the subscription feature. Twitch offers popular broadcasters a special contract, where they enable them subscriptions. Viewers will be able to subscribe for $4.99 per month and gain special benefits in conjunction with directly supporting the broadcasters. As mentioned in chapter 3.1.2, half of the money goes to Twitch and the other half goes directly to the streamer. Some of the special benefits include an ad-free experience, a special icon in chat and the ability to get regular newsletters from the streamer. It takes a high amount of effort to build a large subscriber base, which is needed to get a consistently high income.

Because of the uncertainty involved with commercials and the high requirements to get the subscription feature, many streamers started to accept donations. Streamers are linking their private PayPal accounts in the channel description and accept donations of any amount. Many viewers see streams as a form of entertainment and are willing to pay for it and support their favorite broadcaster. From the author’s experience, some streamers have been able to pass the $100,000 mark in a year solely by getting donations.
However, the ability to receive donations from a community has also been abused already. A recent case is a broadcaster who goes by the handle ‘Zilianop’ [60]. He claimed he was permanently disabled due to a car accident. On his live-streams, people were able to witness him sit in a wheelchair all the time. His viewers donated money to him believing that he is disabled and genuinely wanted to support him. However, on 5 April 2013 his viewers were able to witness him unexpectedly standing up and walking away. The general consensus by people who have been watching him for a longer period of time was that his disability was set up in order to receive high amounts of donations. According to a statement by Twitch, his channel was closed and his partnership terminated on the basis of fraud. In addition, Twitch issued refunds to users who were previously subscribed to him through Twitch.

4.2.2 Building a viewer base
From the author’s perspective, a possible way to get returning viewers is to interact with them by responding to comments in the chat and to private messages. Additionally, viewers should be advised of following the channel. As viewers start getting more familiar with a specific broadcaster, at one point a level will be reached where viewers will say ‘I’m wondering if this person is streaming again or uploaded a new video?’ By contrast, some players are able to do well without any personal viewer interaction – those are usually pro players who are watched mostly because of their ability to perform in a game at the highest level.

It is also important to have a consistent schedule of streaming. If there is a break, like a vacation, the streamer should make it clear to his audience. Otherwise, his viewers might start to look for other channels and discover a new stream fulfilling their entertainment needs.

Hamilton et al. did a survey which included interviews with several streamers and viewers to analyze the social environment of streams [16]. His research findings showed that viewers of a stream often reflect the personality of the streamer. Streamers are able to develop an atmosphere on their stream that mirrors their behavior and values. According to one of the streamers he interviewed, it has a quality control effect on the stream; “if the streamer is calm, collected and respectful, then the stream will attract viewers who are the same”. Consequently, interviewees in the research also identified streamers which “exhibit silliness or open anger on their streams” and that such qualities also tend to draw a similar crowd to the stream.

In their analysis of Twitch streams, Kaytoue et al. discovered that new game releases coincide with a peak viewership on Twitch that gradually decreases over time [21]. As possible explanations the research team listed that potential customers are inspecting streams before making the decision to buy and that some games may not turn out to be entertaining to watch. From the author’s experience, broadcasters are able to take a first-mover advantage when a new game releases and build a sizeable viewer base. However, it is also regularly the case that already established broadcasters play a new game as well, in order to attract new viewers to their own channel. The established broadcasters are making it difficult for streamers who want to become a popular broadcaster in a new game, because of inherent advantages which will be explained in Chapter 5.
4.2.3 Social experiments on Twitch

Taking advantage of the functionality of Twitch, some users decided to set up streams as social experiments. One recent social phenomenon was the channel ‘TwitchPlaysPokemon’, a channel where thousands of people would play a single game of the original Pokémon (version Red) simultaneously [7, 17, and 56]. Pokémon used to be a piece of software to be played on Nintendo’s Game Boy (a hand-held computer for playing video games, see, e.g., [2]).

In the stream of an Australian programmer, who has chosen to remain anonymous, thousands of viewers had full control of the game by typing the words left, right, up, down, a, b, and start in the chat room. The game would randomly select one of the commands from the chat and trigger the responding action in the game. To the surprise of many people, the game was completed after 16 days of play time.

Figure 4.4 Screenshot of the stream ‘TwitchPlaysPokemon’, (Source: gameinformer.com)

Figure 4.4 illustrates how the stream looked like when the game was being played. Originally, the stream creator only had the mode ‘anarchy’ available for the game. In this game mode, each viewer would submit a command through the chat, for instance to move the character to the left or right. The program would then select a random command out of all submissions and trigger it with the corresponsive action in game. However, as the viewer numbers of the game increased, the in-game character got stuck in some places and it was impossible for the viewers to advance further in the game at those points. To fix this problem, the stream creator added a new mode named ‘democracy’ [17]. In the democracy mode, the program would accumulate various commands and trigger the most popular action after a longer time interval. In figure 4.4, 90 people submitted the action ‘down’, whereas 41 people wanted the character to move ‘left’. However, using the democracy mode felt as an unfair method to many viewers, as it would speed up the game.
significantly and it wouldn’t feel so special anymore. Therefore, the programmer decided to let viewers switch between the different modes at any time. The change from anarchy to democracy mode and vice-versa was also done by chat commands. Figure 4.4 shows a bar that would move in a different direction depending on votes for anarchy or democracy. In practice, the stream viewers decided to limit use of the easier democracy mode for passages where the character was stuck for a long time.

According to Twitch, 36 million people had watched the game in progress and 1.16 million users had contributed to it by actively participating in the chat [8]. The creator of the stream and program stated in an interview with CNET that he never thought the game could be completed by such a massive crowd [56]. He mentioned that some players tried to trigger commands on purpose that were detrimental to the game’s progress. However, he added that the majority of the viewer base tried to complete the game and in the end they ended up being successful.

4.2.4 Intangible Factors for Video Channel Marketing

The author considers different attributes to be important for becoming a successful stream – e.g. the player skill in a specific game, the audio and video quality of the stream, the ability to interact with viewers through the chat system, networking with other broadcasters, etc. However, there are additional factors to consider in a platform that consists primarily of a young male audience.

To analyze the effect of looks and gender on gaming streams, the author conducted an interview with Daniel S. Hamermesh, professor emeritus of economics at the University of Texas in Austin, who specializes in measuring the advantages and disadvantages of beauty and looks in different aspects of life

The professor stated that most men would rather look at women than men when playing these games (or doing any kind of activity), and that in the case of Twitch this non-central, non-productive characteristic of being a female is able to offset differences in gaming skill or video quality and lead to a similar viewer count and more contributions compared to a male streamer.

In addition, if there are two streamers who are equal in terms of gaming skill, production quality and entertainment value, the better looking streamer is most likely going to be favored by viewers based on his or her looks. According to Professor Hamermesh, the market of streaming is an analogy to the real world market, with people willing to pay for looks, especially for looks of women since women are scarce. It presents similar issues, problems and difficulties, as does discrimination in the real world.

From the author’s experience, some streamers were able to achieve higher viewer counts by turning their webcam off. By contrast, players with an average or below average skill-level were able to reach high viewer counts by having a very attractive physique.

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4.2.5 Analytics from TwitchTV

Similar to YouTube, Twitch offers all partners an analytics tool. The tool is able to display the amount of followers gained each day, video plays in each hour, number of commercials run and unique visitors. The revenue from commercials is also displayed in a graph which is updated one time each day. The screenshot below illustrates the revenue for the author’s channel for the month December in 2012:

![Revenue Graph]

**Figure 4.5** TwitchTV Broadcaster Dashboard, section partnership (Source: www.twitch.tv)

In Figure 4.5 the daily earnings depend on the amount of hours streamed, the number of commercials that have been shown and the number of active viewers on the stream. On 22 December, a 24-hour live stream was done without a break, which explains the spike in the daily earnings.

4.3 Social Media Platforms

From the author’s experiences, it is beneficial to build a following on other social networks. A following on social networking sites can be beneficial for several different reasons:

- Ability to announce new videos and streams;
- Interaction with viewers and the community;
- Building and maintaining a ‘personality status’(see, e.g. [37]);
- Sharing pictures and personal news;
- Less dependence on YouTube and Twitch.
This section provides an overview of the most important social media platforms. As stated by GlobalWebIndex [52], a digital market research company, Facebook currently is the largest social network in the world. According to Facebook Newsroom [43], the total number of Facebook users was estimated to be 1.23 billion monthly active users by the end of 2013. Facebook can be used to connect with other people and to create a positive image. Additionally, it helps to inform people of new video content. Facebook can be linked directly to a Twitch or YouTube channel page.

According to Statista [46], Twitter had 271 million active monthly users in Q2 2014. Similar to Facebook, Twitter can be used for collaboration and networking. It is also possible to use Twitter for more than just interaction with the own following. For example, a video creator could follow related companies or developers to keep up-to-date about conventions, new product releases and meetings. Twitter can also be linked directly to YouTube channels and to Facebook. Linking Facebook to Twitter (which means that Facebook messages get automatically posted to Twitter) reduces the workload, because only one social network needs to be managed. However, due to the different nature of both social networks (Twitter has a 140 character limitation for each post and uses hash tags, @username tags and other Twitter-specific commands) it might be better to invest that extra amount of time and manage both social platforms separately.

Reddit community pages are becoming more and more popular in the past few years. The social news and entertainment website offers “subreddits” (organization unit of a specific interest, for example policy, sports, gaming etc.) for most niche products and games nowadays.
5 Problems & Solutions

Being able to turn a passion into a living has many advantages. However, there are also problems involved with being a professional video broadcaster. This section points out potential problems broadcasters may encounter throughout their career.

From the author’s experiences, streaming and making YouTube videos have several problems in common:

- Copyright issues;
- Games losing their player base;
- Different cultures.

Making videos of video gameplay and monetizing them is an infringement of copyright laws. The video game publisher holds the rights for both the visual and audio parts of the game. This problem can be solved rather easily by obtaining a special license from a gaming network. However, broadcasters are frequently observed to stream or add music to their YouTube videos to make them more interesting. While the gaming license covers the audio and video monetization of gameplay content, the distribution of commercial 3rd party music is not included. YouTube automatically detects if a copyrighted song is being used, and flags the account. The effects are at first a disabled monetization for the video, and, if multiple copyright breaches occur, a termination of the YouTube account. Obtaining music licenses can be a very time consuming and expensive process for broadcasters and is often very complicated. According to a guide put together by the Electronic Frontier Foundation [33], one possible solution to obtain music is to use royalty free music – music that is available for free on the web as long as credits to the authors are given. Alternatively, music labels can be contacted and asked for special deals and licenses.

Another problem broadcasters in the gaming area have is to be focused solely on a single game. Many gaming channels are dedicated to a specific game, making guides, instructional movies and gameplay montages about that one game. However, the gaming industry is a fast-changing business. New games are entering the market and existing games might suffer a decline in the player base. As a result, broadcasters for one specific game won’t attract enough views anymore to finance their living. To avoid this problem and prevent the channel from ‘dying’, it is recommended by Hamilton et al. [16] that broadcasters don’t just stream the gameplay of one specific game, but also include their personal life and work on creating a personality or streaming environment that people enjoy to hang out with regardless of which game is being streamed. For instance, one day each week could be dedicated to play random games or to test games for the audience. Additionally, hardware reviews can be made or general stories about life experiences.

A large portion of the streams are in English. In addition, the viewer base comes from anywhere in the world – the United States, European countries, Asian countries and more. The diversity of the viewers is high, and while they have the same hobby and passion in common, there might be some
cultural differences in terms of emotions, reactions and misunderstandings. Moreover, it could be hard for some people who are non-native English speakers to understand the broadcaster. It is important to understand the cultural differences and also the language barriers. The latter could be loosened if the broadcaster is speaking more slowly and clearly to make sure he is being understood by everyone.

The previous paragraphs listed possible problems that can occur regardless of the platform. However, there are also some potential problems that are specific to either live streaming or videos. First, the problems of YouTube videos will be covered in the next section.

From the author’s experiences, YouTube related problems are often in connection with bots, which are remotely controllable computers [12]. Those bots are used for different reasons. Some broadcasters use bots themselves to increase the viewer count of their videos. This results in higher ad revenue, more exposure and higher rankings. Other people have access to ‘dislike bots’, which is a network of bots that automatically dislike videos each time a targeted broadcaster uploads one. A high number of dislikes or a bad like-to-dislike ratio can negatively impact the reputation of the broadcaster. Stefan Vraspir from the YouTube Partner Support stated on their official blog that anything artificially increasing the number of views is a breach of their terms of service and might result into a deletion of videos and closure of the account [58].

Live broadcasting is also associated with some problems. According to Twitch, the time of the year affects media costs, media effectiveness, and consumers’ buying patterns [50]. The advertisement budget is usually the highest when consumers are most likely to spend, for example at the start of summer, back to school, and the holiday season. Additionally, gaming companies are targeting launch dates for their games around the holidays. The following budget guidelines are recommended by Twitch to their broadcasters to plan their seasonal effects:

- Months with LOW spend, in very rough order of least to most: January, February, April, July;
- Months with AVERAGE spend, in no particular order: March, May, August, September;
- Months with HIGHEST spend, also in rough order of least to most: June, October, November, December.

Players who are mostly being watched because they are professional in a game face additional problems. As in traditional sports, there will be a time where a player can’t compete on the highest level anymore and will be forced to end the career. According to Tobias Sherman, co-founder of a sports agency for gamers named eSports Management Group, “gamers need to think about other options by their mid-20s” [49]. Thompson et al. conducted a study based on 3,305 players of the online RTS (real-time-strategy) game ‘Starcraft’, which is based on speed and strategy [36]. The measured metric was the reaction time of players and cognitive motor-skills based on thousands of hours of playtime. Thompson summarized the findings in his research article: “After around 24 years of age, players show slowing in a measure of cognitive speed that is known to be important for performance. This cognitive performance decline is present even at higher levels of skill.” As a result, many players are forced to retire in their mid-20s due to slower reflexes and the lack of fine
motor skills when compared to younger athletes. If a stream is built around the skills of a player, he might not be able to compete with everyone else once he passes a certain age and therefore also lose a large amount of his viewer base. The gaming company Riot Games employs the best players in their game ‘League of Legends’ and pays them a monthly salary for their duration as professional players. To help retiring players, the company announced to be “[…] working proactively to ensure professional gamers can have career longevity by creating regular summits that aim to teach pro gamers how to maintain their personal brand [59].” In addition, the company is offering courses on the do’s and don’ts of being in the public eye, interviewing techniques and general media training. According to Jason Yeh from Riot games, the training develops skills which can be used both in and outside of professional gaming. From the author’s experiences, some professional players have already behaved inappropriately in the public, insulting other competitors at tournaments or players of the game. Moreover, Kim and Parlow declared off-court misbehavior by professional athletes in sports as frequent events [22]. The author contemplates supplementary reasons for the training programs, for example to educate players on public misconduct to reduce the amount of negative publicity that the company receives when a contracted player misbehaves in the public.

Due to the increasing number of ad-block users and the seasonality of ad revenue, many streamers are dependent on building a large number of subscribers that pay the $4.99 monthly fee. To build a subscriber base, the author observed several streamers doing so called ‘giveaways’. A giveaway is giving away an item, game, in game currency or real cash for free to a viewer or subscriber. For example, a giveaway of a $600 graphics card would get several people interested in subscribing. However, people only subscribing for giveaways might unsubscribe again as soon as the giveaway is over. Another problem with subscriptions is the “Twitch turbo feature”. A major benefit of subscribing to a channel is the removal of the display of commercials. Twitch introduced turbo, which is priced at $8.99 per month and in return disables commercials for turbo users on all channels. As a result, less people subscribe to channels due to the fact that paying for turbo already removes commercials on any channel a viewer would watch. One possible solution to still maintain a subscriber base is to provide other special benefits to them, like special attention, regular newsletters or one day a week that is specifically dedicated to subscribers.

Another problem is the concentration of the viewership. Kaytoue et al. [21] analyzed the behavior and events on the live-streaming platform Twitch for a period of three consecutive months and declared that “the top 10 % of streamers concentrate 95 % of all views, showing that the audience attention is grabbed by a very small set of streamers”. His possible explanations were (i) scarcity of good streams/streamers and (ii) low quality of stream recommendation. From the author’s experience, it is very difficult for small streams to be visible on the platform. Placement on the front page of Twitch is reserved for partners and on the game-specific pages, channels with a higher viewer count are favorably placed on the top of the page. There are viewers on Twitch which only visit the top streams for a game, making it increasingly difficult for smaller streams to attract new viewers. Being among the top streams for a specific game also brings additional synergy effects with it. Due to the higher viewer count, the chat will be more active. Top streams also benefit from a variety of networking and snowballing effects, for instance if their viewers recommend the stream to their friends. However, Twitch has already taken steps to improve the
prominence of small streams. In July 2014, Twitch introduced ‘Host Mode’ [54]. The Host Mode allows broadcasters to host other broadcasters if their own stream is offline, similar to embedding the video of someone else on a website. The measure is supposed to increase the social connectivity amongst users.

Lastly, technical problems can occur. The author experienced multiple distributed denial-of-service (DDoS) attacks while he was streaming gameplay [15]. Those attacks flood the streamer with pings, effectively shutting down the internet connection. A sudden interruption of a live-stream may lead to people leaving the stream and starting to watch someone else. DDoS attacks can be caused by competitors or users who dislike a streamer. According to Mirkovic and Reiher [26], attackers recruit a bot network to initiate the attack which then temporarily shuts down the broadcasters’ internet connection. To prevent those attacks from happening, it is important to hide the IP address either through proxies or through a VPN (virtual private network), which is a safe option nowadays. Downsides of proxies and VPN are an increase in latency, which can negatively impact the gaming experience on its own.

To summarize, being a streamer and video creator also has a variety of problems associated with it. One that wasn’t mentioned yet, is the dependency on video and live-streaming platforms, e.g. YouTube and Twitch. From the author’s experience, it is important to focus on the big picture and build yourself as a brand. That involves driving the viewer base from the video platforms to social networks like Facebook and Twitter. In addition, e-mail marketing could be set up, which would be another independent way to inform people about new content (see, e.g. [6]).
Online video platforms and gaming live streams have been constantly growing in the last few years. Twitch CEO and co-founder Emmett Shear stated that the streaming platform is experiencing an increase of users by 13% month over month [39]. According to Shear, a meta-shift in how people consume media is the reason that the average viewer spends about an hour per day on the site. Twitch is constantly trying to enhance their audience. From the author’s experiences this can be seen in their recent efforts to reaching out to female gamers, allowing new games to be broadcasted that have a high representation of female players.

This thesis analyzed the concept of live-streaming and the creation of YouTube videos as potential career paths and contains information on the technical, commercial and strategic side. In a competitive environment with more and more people trying to become full-time entertainers on those platforms, it is essential to optimize the channel and make use of strategies to build and keep a high viewer base. In the findings of this thesis, the backbone of becoming a video-creator is to fulfil the technical requirements and have the ability to learn and utilize the different software programs. In terms of building an audience, successful content creators either focus on high-skilled competitive play or on entertainment elements and try to stand out from the crowd in their respective areas. There are different methods to monetize content, including ad revenue, monthly subscription revenue, donations and sponsorship deals. Finally, literature review has shown that the personality of a streamer is often reflected by their emerging community.

In conclusion, with the social experience of streaming and the culture shift from magazines and game news websites to video it can be expected that live streaming platforms will continue to gain popularity and exposure in the future. Further research has to be done on the sustainability of full-time streaming as career path. In particular, broadcasters with a stream focused on showcasing high-skilled gameplay might run into difficulties once their cognitive abilities diminish, which seemingly already starts at the young age of 24 [16]. In addition, the interconnectivity between Twitch and their new parent company Amazon has to be monitored and potential synergy effects of the billion-dollar acquisition have to be explored.
References


