STEAM AND THE PLATFORMIZATION OF VIRTUAL GOODS

An Analysis of the Weapon Skin Economy
in Counter-Strike: Global Offensive

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ABSTRACT

Random reward mechanisms, such as loot boxes, crates and cases, have been increasingly implemented by computer game companies to monetize additional content. These mechanisms have been wildly criticized, especially for being addictive and a digital form of gambling. This paper, however, analyzes the phenomenon from a media-economic and cultural studies perspective in order to determine to what extent random-based reward mechanisms can be regarded as a platformization (according to Helmond, Niebog and Poell) of computer game culture. This connection is exemplified by the weapon skin economy in COUNTER-STRIKE: GLOBAL OFFENSIVE. The economy consists of virtual goods (skin cases and weapon skins) that can be acquired, exchanged and traded via the platform Steam. Additionally, the labor of users is commodified in the process: the creation of user-generated content (modding) is monetized, on the one hand, and the distribution and evaluation of the content is centralized via Steam, on the other. The analysis of the weapon skin economy thus makes it possible to focus on the entanglement of labor, play and economization.

Keywords: Platformization, Virtual Goods, Weapon Skins, Steam, Counter-Strike

1. BLACK MARKET WEAPONS TRADE AND VIRTUAL GOODS

> "Introducing the Arms Deal Update, which lets you experience all the illicit thrills of black market weapons trafficking without any of the hanging around in darkened warehouses getting knifed to death."[1]

When Valve promised its customers the exciting world of black market arms trading in August 2013, no one knew that only a few years later illicit trading of weapon skins in COUNTER-STRIKE: GLOBAL OFFENSIVE (2012)[2] would become the subject of actual legal disputes. With the Arms Deal Update, Valve not only introduced skins, but also a random reward mechanism (Nielsen/Paweł 2018, 6). This allowed players to receive virtual goods, known as skin cases. After paying for a key to unlock such a case, players receive a random weapon skin. Each equipped skin in turn changes the appearance of a weapon within the virtual world in its own way - and can thus be used for self-expression and individualization. However, skins do not affect mechanics or other aspects, such as weapon damage. Additionally, skins can be offered for trade or barter via Valve's distribution platform Steam, potentially fetching high prices due to scarcity and various levels of rarity. This combination of esthetic and subjective incentives, random rewards, and an economic marketplace led to the establishment of a complex weapon skin economy.

CS:GO is not an isolated case; various multiplayer and competitive games in particular use similar random-based reward mechanisms to monetize various virtual goods and retain customers. Famous examples include OVERWATCH (2016), STAR WARS: BATTLEFRONT II (2017), FORTNITE (2017), EA titles using the Ultimate Team mode, and innumerable mobile games. However, the mechanisms are implemented differently by the companies. On the one hand, a distinction can be made between virtual goods, such as skins, which exclusively influence the appearance (of weapons, characters, etc.), and items that more directly influence game

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[1]   For the full announcement, see https://blog.counter-strike.net/index.php/2013/08/7444/ [last access: 20.05.2021].

[2]   In the following, Counter-Strike: Global Offensive will be abbreviated as CS:GO.

rules, for example, by changing weapon damage or other values. This is illustrated, for example, by the controversy surrounding microtransactions in STAR WARS: BATTLEFRONT II: The game was criticized by fans and journalists for allowing players to buy advantages in a multiplayer title.[3] On the other hand, there are distinctions in regard to limitations of the trade and sale of virtual items; for example, in contrast to CS:GO, in OVERWATCH virtual goods are directly tied to the player's account and cannot be exchanged. Despite these different approaches, there are similarities in regard to the use of probability distribution. In the majority of games, virtual goods are divided into different categories, which in turn creates artificial scarcity. As a result, rare items sometimes acquire a high collector's value,[4] this attribution of value leads to their use in gambling and betting, among other things.[5]

Over the course of the popularization of these random-based reward mechanisms, which, depending on the game, are called cases, crates, packs, loot boxes[6] or something similar, the ethical and legal implications were increasingly debated from 2016 onwards. Following these discussions, loot boxes were first banned in Belgium, the use of virtual goods for gambling was prohibited in the Netherlands, and various provider sites were blocked in Denmark (Danish Gambling Authority 2017). Other countries, including England and New Zealand, continue to allow these mechanisms, but regulate them. In the U.S., there are various political initiatives

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[3]   The main criticism was that Star Wars: Battlefront II used so-called Pay2Win mechanisms. Pay2Win describes games in which purchased virtual goods have a direct influence on the gameplay, for example, by increasing certain values or unlocking additional options. The criticism led to various changes to the game, among other things. For a chronological overview of the controversy see Jackson 2017.

[4]   Comparisons can be drawn to tradable collectible card games, such as Magic: The Gathering (1993-), especially in the relationship between virtual goods and the increase in value of rare and sought-after cards.

[5]   The topic of gambling and betting is further explored in section 3.2.

[6]   The term loot box, or lootbox, has become the most commonly used generic term for the different random reward mechanisms. In this paper I will use this term in its more general meaning.

that have not yet achieved concrete results. Loot box mechanisms, especially simulated gambling in sports series, are increasingly being criticized in Germany.[7]

The phenomenon has attracted increased attention in recent years, which has led to a number of psychological, legal and sociological-empirical studies in recent years. Topics such as motivation, addiction through gambling and legality are in the foreground (Frieling 2017; Holden/Ehrlich 2017; Martinelli 2017; Zendle/Cairns 2018; Macey/Hamari 2018). However, even though these are important perspectives, the studies remain one-sided, focusing on the individual subject and media effects. This paper complements this by examining the so-called weapon skin economy from a perspective that combines media cultural studies, discourse analysis, and media economics (Nohr 2008; Nichols 2014; Ruggill/McAllister/Nichols/Kaufman 2016). In doing so, the weapon skin economy in CS:GO offers an example to trace the relevance of chance-based reward mechanisms and the effect of commodification of user-generated content. First, the cultural history of modding will be discussed in order to elaborate on the specific function of Valve's own distribution platform Steam. Then, the exemplary analysis with help inform reflections and theses on the transformation of labor and play.

2. MODDING AND STEAM AS A PLATFORM

Modding refers to the media practice of changing, adapting or expanding commercially published computer game, this takes place in online communities as a collaborative process (Sihvonen 2011; Sotamaa 2010). In the mid-1990s the practice of modding became a legal form of participation, through the acceptance by companies. Relevant for this was, among others, id Software, which – influenced through their publications and company policy – made changes that enabled the establishment of modding

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[7]   For example, there was criticism of the fact that the latest release of the popular sports series NBA 2K (1999-) received an age rating of 0 years by the USK (Unterhaltungssoftware Selbstkontrolle, the organization in Germany responsible for video game ratings) although it has visual and mechanical similarities to gambling. See, among others, Herbig 2019.

as well as machinima and speedrunning.[8] For Doom (1993), Carmack and Romero – who report having enthusiastically hacked and appropriated games themelves in their youth – changed the internal organization of the software (Kushner 2004; Knorr 2012b). Individual elements, such as levels and textures, became editable and changeable without having to over-write the actual code. In addition, the free distribution of self-created content was allowed, initially through tacit acquiescence, which was later transformed into corresponding End User License Agreements.

Counter-Strike (1999) also owes its existence to this open model of interaction, which brought relative freedom for modders and benefits for companies.[9] Building on Valve's Half-Life (1998), Counter-Strike be-came one of the most popular multiplayer games of its time. Counter-Strike was not only a modding project itself, but was further enhanced by fans and players with additional content. This mainly included new maps, skins for weapons and avatars, but also minor changes to the interface, textures and sound effects. This content was in turn distributed, evaluated and further developed on various unofficial sites.

Valve not only hired the developers of *Counter-Strike*,[10] developing further successors to the game in the following years, but also created Steam in 2003, a platform tailored to the distribution of games. Steam quickly established itself as the most important and influential market

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[8] Speedrunning refers to the activity of playing through a computer game as quickly as possible. Depending on the title, there are different categories that specify the exploitation of glitches or additional conditions. The term machinima refers to the combination of machine and cinema, the term is used for videos created with the help of computer games or using real-time game engines. Doom, for example, al-lowed the recording of so-called demos (.DEM-files), which stored keyboard and mouse inputs and could later replay the gameplay. This allowed new formats, such as speedrunning, machinimas or trickjumping, to be made available to an ever-growing and networked audience before video platforms such as YouTube existed.

[9] End User License Agreements (EULA) brought advantages to the companies in par-ticular, as Newman (2008) writes: "the EULA places the creative and productive act of modding into an institutionalized context that is heavily weighted in favor of the commercial developer." (ibid., 175).

[10] Valve also incorporated other modding projects. Team Fortress 2 (2007) is based on a mod originally developed for Quake. IceFrog, a custom map designer for Warcraft III: Reign of Chaos (2002), was later employed for Dota 2 (2013). And in 2019, Valve released Dota Underlords, their first mobile game, which itself was based on a popular Dota 2 custom map.

platform for selling video games, distributing additional content and establishing communities, as well as for the further economization of gaming culture.[11] The Steam Workshop, which was introduced in 2011, enabled users to publish and distribute content they had created themselves, such as mods, skins and maps. Originally modeled after TEAM FORTRESS 2's Mann Company Store, the system was opened up to other games the following year. Castronova (2014) describes Steam as the fusion of traditional forms of user-generated content with the model of platform capitalism. On the one hand, Steam allows games to be purchased, updated and enhanced with official content, such as add-ons and other downloadable content, via the Steam wallet.[12] On the other hand, unofficial content can also be distributed via the workshop and community market.

The establishment of Steam can be understood as an example of the platformization of cultural production as understood by Helmond (2015), Niebog and Poell (2018). Helmond defines platformization as the rise of platforms as dominant infrastructures of the Internet, as well as the enforcement of social media exploitation models based on opaque data generation. This leads to an unequal relationship between extension and centralization, which Helmond (2015, 8) refers to as the "double logic of platformization". On the one hand, platforms offer interfaces and technological frameworks that are as universal as possible, creating the possibility of participating and posting one's own content, while the data obtained from all these interactions, for example, behavioral profiles, are stored, processed and monetized in a centralized way, on the other hand. Based on this, Niebog and Poell analyze the influence of platformization on cultural production:

> "Platformization can be defined as the penetration of *economic*, *governmental*, and *infrastructural extensions* of digital platforms into

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[11]   "At the most general level, platforms are digital infrastructures that enable two or more groups to interact. They therefore position themselves as intermediaries that bring together different users: customers, advertisers, service providers, producers, suppliers, and even physical objects." (Srnicek 2017, 43).

[12]   The Steam Wallet is Steam's own virtual account linked to one's profile. Since funds cannot be withdrawn from the wallet, money once deposited remains within the Steam economy and virtual possessions can therefore theoretically only circulate within it.

the web and app ecosystems, fundamentally affecting the operations of the cultural industries."

(Nieborg/Poell 2018, 2; emphasis in original)

The production and distribution of additional game content is centralized, controlled and monetized by Valve's platform Steam, as will be shown with reference to CS:GO. Thus, a platformization of the practice of modding is taking place. Virtual goods are particularly suitable for this platformization, as they are "contingent" goods. Niebog and Poell use the term contingency to refer to two interconnected properties. On the one hand, the fact that the production and distribution of (virtual) goods is increasingly dependent on platforms, which in turn operate with profiles and surveillance and thus manage access. On the other hand, they use contingency to describe the relative openness of computer games[13] and virtual goods, which can be adapted through their inconsistent and modular design, for example, through the practice of modding.[14]

In the following, I will use the concrete example of CS:GO to trace how Valve used their platform Steam to integrate players into the weapon skin economy. I will examine the platformization of the virtual weapon skins, meaning the production, valuation and circulation of these within the community controlled by Valve, as well as the use of weapon skins for gambling and betting in external platforms.

3. WEAPON SKIN ECONOMY IN COUNTER-STRIKE: GLOBAL OFFENSIVE

At the Game Developers Conference in 2014, Bronwen Grimes (2015), technical artist at Valve, held a presentation on the topic of weapon skins in CS:GO. Her team discussed the possible ramifications of introducing different virtual goods, including the implementation of new weapons and

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[13]   See Newman (2012) on computer games as unstable artifacts.
[14]   Computer games are fundamentally dependent on platforms (for example: operating system, console, app store) and so it stands to reason that the design of games is influenced by the possibilities of marketing virtual goods on platforms: "Game developers leverage the contingent nature of games as software by continuously altering, extending, and upgrading game content and functionalities, while simultaneously optimizing its monetization model." (Nieborg/Poell 2018, 10).

playable characters. Weapon skins were ultimately chosen because skins mainly change the visuals, but only have a limited impact on gameplay. Since weapon skins are visible for both the player and their fellow players, the social component is also increased. The textures of the weapons were comparatively easy to change for modders from the community. Valve wanted to unite their user base, which was scattered across four different iterations of *Counter-Strike*, with the introduction of weapon skins (and the associated reward and distribution mechanisms) in the latest version of the game (Lahti 2015). Finally, the goal of the Arms Deal Update was to build on these new virtual goods to create a robust economy that could be monetized.[15]

As stated above, most weapon skins are distributed via skin cases.[16] Cases are randomly distributed to game players and can then be opened with a virtual key or traded in Steam on the community market. Keys are in turn sold directly by Valve; such keys currently cost around at least $2.50.[17] The cases are the CS:GO variant of a random-based reward mechanism. So-called souvenir packages were distributed for the first time in the context of the DreamHack 2013 e-sports tournament. After connecting their Steam account to the streaming platform Twitch, viewers of the Valve-sponsored tournament could obtain rare weapons by watching the e-sports competitions. Such souvenir skins also have four stickers[18] – one of each of the two teams currently playing, the tournament itself, and the game's most valuable player – and were therefore highly sought after.

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[15] Valve's increased interest in virtual economies was evident when the company hired Yanis Varoufakis as economist-in-residence in 2012 to study how markets can be successfully integrated into games with the aim of helping the longevity of a given video game.

[16] Weapon skins can also be obtained randomly after a regular round of CS:GO, but this is limited to a set number per week; moreover, it is not possible to obtain rare skins this way. See Martinelli 2017, 559.

[17] Deals on the community market for CS:GO vary widely, depending on rarity. Older keys can be significantly more expensive. For recent listings, see: https://steamcommunity.com/market/search?appid=730 [last access: 20.05.2021].

[18] Stickers can be virtually "stuck" on weapon skins and, along with sprays, are among other forms of virtual goods that Valve introduced in later CS:GO updates.

Originally, only cases were released that included skins designed by Valve. Later, e-sports cases were added, as well as community cases, which mainly determine the current virtual economy. Skins are categorized into five different rarities.[19] The most common category, Mil-spec, is distributed at a rate of 79.92%. The probability of encountering a valuable knife, on the other hand, is only 0.26%. In addition, there are other factors, such as the quality, different patterns[20] and the StatTrak[21] trait, which determine the frequency of occurrence and the value of the weapon skin. The mechanics of skin acquisition and variance can be described as deliberately opaque and confusing. The price range is wide: while frequent skins can potentially go for just a few cents on the market, the various gradations and additional features increase the rarity of certain weapons and thus the potential value attribution. In particular, knives with certain color transitions or souvenir skins from the finals of a popular tournament are offered and purchased for tens of thousands of U.S. Dollars.[22] In contrast to the cost of skin cases and keys on the market, these potentially high profit opportunities significantly influence the success of the weapon skin economy. To examine this in more detail, I will now analyze production, valuation and then external markets.

3.1 PRODUCTION, VALUATION AND GAMING CAPITAL

Valve provides the Workshop Workbench, software that enables users to create so-called finishes, which are textures that form the basis for the

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[19] The probabilities could only be estimated for a long time, until Valve had to make the distribution public for the Chinese market in 2017. Within the community, various quite accurate estimated distributions circulated. Among others Onscreen's statistics, which proved to be very accurate in retrospect, see: https://www.reddit.com/r/GlobalOffensive/comments/3cly6c/case_statistics_spreadsheet_of_all_6000_cases/ [last access: 20.05.2021].

[20] Some weapon skins have different random-based variations, such as different color schemes or the number of nets on the Crimson Web skin for knives.

[21] StatTrak shows how many kills have been made with the weapon, which is an addition feature that 10% of all weapon skins contain.

[22] For example, in 2018 a Souvenir Dragon Lore weapon skin for the AWP weapon was sold for $61,052.63, see https://www.polygon.com/2018/1/30/16952248/counter-strike-global-offensive-dragon-lore-skadoodle-skin-sale-opskins [last access: 20.05.2021].

skins integrated into the game. There are various patterns to choose from, which are inspired by real weapon modifications, such as hydro-dipping or spray-painted camouflaging.[23] The first community case, the Winter Offensive Weapon Case, was launched in December 2013. To date, well over one hundred thousand finishes have been uploaded by users on Steam, and almost 300 of them have been integrated into the game by Valve.[24] According to designers, more than $40,000 are paid out per skin. [25] And according to its own data, Valve paid out about $57 million to modders via Steam between 2011 and 2015.[26]

The labor of a weapon skin designer consists not only in creating esthetically pleasing textures, but also extends to advertising and marketing. For this purpose, social media sites such as Reddit, Facebook and Twitter are used and even videos are created that exhibit the esthetic features of a particular skin.[27] This is used to compete for the attention of the community, which helps to decide which proposed textures will be included in CS:GO. Finishes are categorized using different assessment practices:

> "*Valorization*, which creates, increases or decreases the value status of content or actor; *evaluation*, which captures and classifies value status; and *purchase*, where the price paid symbolizes the value of the product."
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> (Hutter 2018, 23; emphasis in original, own translation)

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[23] In addition to the free Workbench, designers also use professional game design software.

[24] Finishes in the Steam Workshop, see: https://steamcommunity.com/workshop/browse/?appid=730&browsesort=accepted&section=mtxitems [last access: 20.05.2021].

[25] It should be mentioned that modding can also be quite profitable outside of Valve's influence, for example, via payments through PayPal or Patreon. New models are also being developed in the community, such as the Mod Author Donation System by Nexus, which is intended to finance modders. See: https://www.nexusmods.com/news/13371 and https://www.nexusmods.com/modrewards#/store/all/1 [last access: 20.05.2021].

[26] The total amount refers to all games that use Steam Workshop, see O'Connor 2015.

[27] For example, the promotional video for the weapon "CSGO | Mac 10 | Neon Rider", see https://www.youtube.com/watch?v=7U_Bq36-Rc8 [last access: 20.05.2021].

First, finishes are valorized by users through commenting, criticizing and grading. If a finish has received enough approval and is integrated into the game by Valve, the skins can be earned or exchanged. Valve's guidelines state that virtual goods can only be traded on the Steam community market,[28] with Valve earning a 15% share for each transaction.[29] The focus on Steam gives Valve complete control over the trade of virtual goods and allows them to earn money. Second, published skins are evaluated by the community, with social interaction, e-sport and external platforms playing a decisive role. Self-expression is an important motivation for the purchase of virtual goods, as they are used to convey monetary, social and cultural capital, lifestyle and interests:

> "Within the immaterial space, people involved cannot represent themselves through their own physical-bodily appearance, but rather must use their avatar and other channels as intermediary."

> (Frieling 2017, 142-143; own translation)

The use of skins by professional e-sports athletes can give them additional prestige. For instance, at the beginning of the Arms Deal Update, the interface displaying tournament live streams was adjusted to display the name, model and rarity of the corresponding weapon used by the players.[30] Valorization also takes place in articles and videos discussing esthetic features of skins. For example, the opening of cases is celebrated on YouTube and Twitch,[31] and newly implemented skins are presented and compared in analyses. The various aspects of evaluation and display can be understood in terms of the concept of gaming capital as proposed by Consalvo (2007). Drawing on Bourdieu's conception of cultural and social capital, Consalvo uses gaming capital to describe the intertwining of gaming experience, positioning within the community and paratextual

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28   The maximum balance of the wallet is limited to $2,000 and a single item may be offered for a maximum of $1,800.

29   The 15% consists of 5% as a basic flat fee and 10% specific to CS:GO, see https://support.steampowered.com/kb_article.php?ref=6088-UDXM-7214 [last access: 20.05.2021].

30   Later, the mention of the weapon was removed from the interface, presumably because weapon skins had become popular and well known by then.

31   In particular, video compilations of rare – and thus valuable – finds are published on various platforms such as YouTube, and then get millions of views.

gaming knowledge: "Players can accumulate various forms of gaming capital not only from playing games but also from the paratextual industries that support them" (ibid., 184). Skins can be described as a paratextual practice through which gaming capital can be acquired; for example, by demonstrating experience, affiliation, or wealth through access to rare skins (Paul 2018). This also effects external markets outside of Steam: there have been, and there still are, platforms that use weapon skin to transform this gaming capital directly into economic capital.

3.2 EXTERNAL MARKETS, GAMBLING AND BETTING

> "By one estimate, more than 3 million people wagered $2.3 billion worth of skins on the outcome of e-sports matches in 2015. This, too, has contributed to Valve's bottom line. The gambling sites run on software built by Valve, and whenever CS:GO skins are sold, the game maker collects 15 percent of the money."
>
> (Brustein/Novy-Williams 2016)

Gambling and betting using weapon skins are lucrative ventures. Starting in 2015 at the latest, third-party vendors have exploited Steam programming interfaces to circumvent Valve's rules. Those external markets made it possible to not only collect and trade virtual goods within the closed platform Steam, but also to pay out winnings directly via PayPal and Bitcoins (Martinelli 2017, 559). For example, the founders of OPSkins – a once popular external marketplace – stated in a 2015 Vice interview that they were taking in about 9,000 euros per day and had 370,000 users and 20 employees in their heyday (Coutu 2017). In addition, there were platforms such as CSGO Lotto and CSGO Wild that offered betting on professional CS:GO games[32] in addition to games of chance, such as coin tosses or roulette (Holden/Ehrlich 2017, 566). Instead of official currency, these games were played for weapon skins, which in some jurisdictions circumvented regulations and laws on illegal gambling. The popularity of

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[32]   According to estimates, skins worth an average of $134,000 were wagered per match during the period; the final game between Luminosity and Fnatic even recorded a total of $1.2 million in wagers, see Brustein/Novy-Williams 2016.

these practices caught the attention of the professional betting and gambling industry, which led them to also take an interest in the topic of e-sports and skins.[33]

This peak phase ended in mid-2016 with a series of scandals surrounding the professional CS:GO scene. Among other things, it became public that two popular YouTubers, Trevor *Tmartn* Martin and Tom *Syndicate* Cassel, owned a gambling website that they promoted in videos without disclosing their own involvement.[34] This led to the first lawsuits against Valve and various third-party providers (McWhertor 2016). In July 2016, Valve announced that it would block the use of the Steam application programing interface for such offers.[35] Twitch also followed suit and blocked users who streamed skin gambling. Although external marketplaces were repeatedly closed over the following years, they are still comparatively easy to find and continue to be advertised.

While gambling and betting are now prohibited, debate continues as to whether underlying random-based reward mechanisms such as loot boxes and skin cases themselves constitute a form of gambling. As early as 2015, Lehdonvirta described the visual and mechanical similarity between opening a case and the logic and design of slot machines (Richardson 2015; Hamari/Lehdonvirta 2010). Nielsen and Paweł (2018) analyze different forms of embedding the reward mechanic, differentiating whether the loot box and virtual goods can or cannot be bought or sold through the platform. With Steam allowing the exchange of both cases and skins, they describe games like CS:GO as "functionally similar to gambling" (ibid., 13). In addition, there are now several empirical studies that suggest a link between loot box mechanics and gambling. Zendle and Cairns' (2018) study demonstrated a correlation between the amount of

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33   In 2016, two white papers were published by the company Narus, both of which are unfortunately no longer available online. Among other things, they described how e-sports, skin betting and gambling could be integrated into casinos.

34   With potentially far-reaching consequences: "The failure of the YouTubers to disclose their management stake in CSGO Lotto has raised many eyebrows in the industry and could potentially expose the two individuals to even greater liability." (Holden/Ehrlich 2017, 568).

35   See the related news story on Steam Blog https://store.steampowered.com/news/22883/ [last access: 20.05.2021].

money gamers spend on loot boxes and the incidence of pathological gambling.[36] Macey and Hamari's (2018) survey also indicated that individuals who follow e-sports competitions are more likely to engage in gambling.[37] It can be concluded that even though Valve is cracking down on external marketplaces, gambling still remains a problem because the core monetization of the virtual economy relies on potentially addictive mechanics, which in turn target minors. In addition, official licensed gambling companies are still sponsoring tournaments and teams.[38]

The analysis of the weapon skin economy in CS:GO exemplifies how the introduction of tradable virtual goods in CS:GO not only brought new incentives for players, but the skins also introduced complex economies for both the Steam platform and external providers. Taking the case study as a starting point, I will conclude by taking a look at platformization as a larger transformational process of computer game culture.

4. PLATFORMIZATION AND COMPUTER GAME CULTURE

Valve has managed to incorporate the practice of modding into their economy by establishing the Steam Workshop and paying individual modders, while valorization and other areas of community labor remain unpaid.[39] This official inclusion of modding can be read as part of a larger

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[36] Pathological gambling (or gambling addiction) is defined by Zendle and Cairn (2018) in this context as: "Problem gambling can be defined as a pattern of gambling activity which is so extreme that it causes an individual to have problems in their personal, family, and vocational life [...]. Problem gambling is typically described as being both excessive and involuntary" (ibid, p. 2). The Problem Gambling Severity Index (PGSI) was used for measurement.

[37] "eSports, Skins and Loot Boxes: Participants, Practices and Problematic Behavior Associated with Emergent Forms of Gambling," (Macey/Hamari 2018, 20-41) – they define the loot box mechanics not as gambling, but as a "gambling-like experience."

[38] For example, Betway sponsored the Intel Extreme Masters Season XIII - Katowice Major 2019, and gg.bet and cs.money were mentioned for the DreamHack Masters Dallas 2019.

[39] See the discussion surrounding Paid Modding and Bethesda's The Elder Scrolls V: Skyrim (2011), where Valve backpedaled just a few days after introducing a similar model. This shows that it is not yet clear how this model can be adapted to other titles. See also the critical discourse analysis of the discussion in Joseph 2018.

narrative, which Knorr (2012a) refers to as "being a god full time". Referring to this quote, he describes the desire of modders to enter the professional field of game design. After all, weapon skin designers can also become well-known and successful, as in the case of Chris *Coridium* Brown, who created the ASIIMOV weapon skin series.[40] Despite careers such as Brown's, a crucial difference that Strube (2016, 59; own translation) describes as elemental to platforms remains: the "clear separation between those who [...] work for the platform owners and those who work on the platform [...] itself." In this sense, working on Steam can be understood as a virtual gig economy[41] in which a large amount of crowdworkers produce virtual goods (Waitz 2017). This gig economy is characterized by an informal conception of work and earnings, in which an anonymous group faces a centralized administration, and this relationship is characterized by asymmetric power. Profiles, assessments and lack of financial and social security are other elements of this conception of work.

At the same time, unpaid forms of participation and labor remain the norm in computer game communities (Zimmerman 2019). For one thing, players create content, such as tutorials or fanart, and help newcomers. In this context, Schäfer (2006, 303; own translation) speaks of players increasingly taking on "helpdesk and support tasks" when explaining gameplay mechanics to each other or pointing out bugs to companies. In addition, "through their intrinsically motivated work on consumer products, they simultaneously perform development and research for the companies." This development was already critically analyzed before the establishment of the Steam Workshop on the basis of concepts such as Invisible Labor, Playbour (Kücklich 2005), and Free Labor (Terranova 2000).

[40] Chris Brown says he studied product design and works in the video game industry. He mainly created weapon skins to make money for his own passion projects. See the interview with him at: https://fragbite.se/cs/news/36127/asiimov-skaparen-steam-workshop-has-genuinely-changed-my-life#interview and his Steam Workshop site: https://steamcommunity.com/id/coridium/myworkshopfiles/ [last access: 20.05.2021].

[41] The gig economy subsumes various short-term employment relationships, especially in the context of platforms that mediate between supply and demand. The platforms provide the infrastructure, but assume only limited responsibility for the workers.

Furthermore, it was set in relation to concepts beyond gaming culture, such as presumption, audience commodity or convergence culture (Postigo 2007). On the one hand, the discussion focuses on the exploitation of gamers and the siphoning off of various aspects of emotional, social and creative labor. On the other hand, it focuses on rules and guidelines under which this participation takes place. In turn, these policies are changing with the rise of centralized platforms. Historically, modding offered great freedom to players in terms of content selection, distribution and field of application. Even today, there are still many self-managed communities, especially for the modification of open-world role-playing games. However, the platformization of the Steam Workshop has narrowed the scope of CS:GO compared to older iterations. It is constitutive for the platformization of gaming culture that virtual goods and creative practices are externalized (gig economy), while at the same time centralized and controlled. Thus, production and evaluation are outsourced and designers are in direct competition with each other through the Steam Workshop. At the same time, critical or subversive appropriations, which were possible with traditional practices of modding,[42] are not impossible, but at least less likely because all information and decisions, as well as most of the profit, are directed at Valve. Valve doesn't have to exercise censorship for this, but the incentive system and the marketplace indirectly ensure that only popular weapon skins are included in the game. Skins that are not officially selected can be used on private servers, but they lose relevance in the competition-oriented multiplayer game.

The weapon skin economy exemplifies the process of platformization as described by Helmond (2015), Niebog and Poell (2018). Platforms provide infrastructure and externalize practices, but retain control over generated data, profiles and monetization. In the case of CS:GO, this can be

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[42]   For the original Counter-Strike, the artistic intervention Velvet Strike (2002) by Anne-Marie Schleiner, Joan Leandre and Brody Condon can be seen as a striking example. On the associated site sprays and other things are downloadable so that they can be used as a critical intervention in the game, similar to a virtual protest. See   http://www.opensorcery.net/velvet-strike/about.html   [last   access: 20.05.2021].

seen in how skin modding and community building have been commodi-fied through centralization and incorporated into a marketplace.[43] As Gal-loway describes, this points to a more fundamental shift in the relation-ship between workers and players:

> "This will be the ultimate tragic denouement of the rise of gaming, of the democratization of play, of social media, of open-source software: it will result in the open-sourcing of all labor; the demand for "volunteer" workers will metastasize across all spheres of public life. Tasks will be crowd sourced more and more. Greater value will be extracted for fewer and fewer wages."
>
> (Galloway 2014)

Playing outside the logic of exploitation is disappearing - and this has an impact on the social conception of labor and leisure.[44] At the center of this transformation are large studios and platforms that focus on controlling access and the long-term involvement of players with their products. On the part of the game industry, this development is partly staged as a con-sequence of the "disruptive" forces of technical innovation. For example, Andrew Wilson, CEO of EA, explains the shift from ownership to access as follows: "The advent of cloud has pretty much been at the center of every disruption of every major industry on the planet over the last five years [...]. The disruption is typically driven across all industries toward access over ownership" (Futter 2019). Concepts such as games as a service, cloud gaming and the streaming of games show how closely the design of games is intertwined with business models.[45] Games as a service, for ex-ample, refers to various commercial models that aim to bind players to

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43   In addition to this example, there are other developments and mechanisms that can be understood as part of this transformation, be it the freemium model of titles like Fortnite, subscription systems like the Battle Pass, the focus on different virtual currency systems or the increase of gambling mechanics and microtransactions.

44   Joseph (2018) describes the future of gaming culture similarly when he concludes: "[...] the habits and spaces that once marked [Games] as distinct activities from our work lives will quickly disappear [...]. The 'discourse of digital dispossession' will be omnipresent as social life and hobbies are fully commodified." (ibid., 3). See also his presentation "Digital Games. A Canary in the Coal Mine of Capital," https://so-cialistproject.ca/leftstreamed-video/digital-games-canary-in-coalmine/ [last ac-cess: 20.05.2021].

45   Kim Soares, founder, CEO and lead designer of Kukouri Mobile Entertainment (Fin-land), for example, explains how the business model has become more important

virtual game worlds for the long term by providing additional game content that is then monetized. In cloud gaming, the game is run on external hardware and only certain data, such as an audiovisual stream and input, is transmitted to and from end devices.[46] In both cases, there is a transformation from ownership – of hardware and software – to a platform-based access economy (Rifkin 2000).

A contrasting perspective would be to take computer game companies seriously in their role as pioneers of platformization, especially when it comes to adapting, developing and discursively anchoring new technological and economic models. Among other things, this would include the control of production and distribution by individual platforms (such as Steam), on which virtual goods are in turn produced and traded. The use of behavioral profiles, the recording of decisions and the use of this data in the context of virtual worlds, and most recently the integration of (unpaid) labor, has also been (further) developed through games. The parallels between weapon skin economies, on the one hand, and platformization, access economies and gig economies, on the other, indicate that there is not a one-way, but rather a two-way influence between games and economies. Participation in virtual economies within games therefore does not take place in the wake of technical innovations, but the game worlds themselves are experimental fields in which new practices and forms of labor are tested and learned (Dyer-Witheford/de Peuter 2009). In this sense, the platformization of virtual goods, modding and the estab-

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than the game design in mobile gaming: "In mobile games, the race to zero in pricing of products has given birth to free-to-play. Free-to-play is now the dominant business model, and there's no going back. This severely limits what kind of gameplay choices developers have. We've been trying to come up with a new game concept for our next big project for some time now. We had several concepts that were confident we could make into good games, but forcing them into free-to-play proved impossible, so we abandoned them. It's frustrating. Increasingly, it's not about making a good game but about making a good platform for microtransactions (i.e. in-app purchases.)" (Ruggill/McAllister/Nichols/Kaufman 2016, 340–341).

46 Most recently, cloud gaming services such as Microsoft xCloud and Google Stadia have been at the center of the discussion about streaming as the future of gaming.

lishment of the weapon skin economy in Counter-Strike: Global Offensive should be understood as indications of a larger transformation of cultural production within computer game cultures.

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