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# The macro problem of microtransactions: The self-regulatory challenges of video game loot boxes

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**Abstract** The video game industry has ignited a global controversy surrounding microtransactions in gaming, especially the use of loot boxes: randomized rewards with potential real-world value. Consumers and legislators are calling for the regulation of these revenue models on the grounds that they are unfair, predatory, or could be considered gambling. This article examines the controversy from a management perspective. First, I outline current regulatory responses to the controversy and what they mean for business practices. Then, I explain ongoing industry-level and firm-level attempts to self-regulate as a way to placate consumers and governments. These tactics highlight a wide range of broader strategies that game developers and other stakeholders can pursue in order to improve customer relations and, more publicly, signal their commitment to self-regulation and avoiding consumer harm. These practices can be applied more broadly to firms that offer controversial products or services that do not yet fit within current regulatory frameworks.


## 1. Loot boxes: From concept to controversy

In just a few decades, video gaming has grown from a niche pastime into a cultural and economic phenomenon and in the process created an industry with an estimated global market value of $115 billion in 2018 (Statista, n.d.). But this success has not come easily. Competition has been fierce for many years (Schilling, 2003) and growth has frequently been accompanied by criticism and calls for regulation. Currently, consumers and regulators are voicing concerns about the sale of digital content in games (microtransactions), especially the purchase of randomized content (loot boxes). Game

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developers and publishers are being criticized for increasingly relying on these transactions to generate revenue, a practice that some view as illegal or exploitative.

The controversy over loot boxes originated with consumers, who used social media and online forums to express frustration with the choices of major developers and publishers. The loot box debate has been the worst for leading publisher Electronic Arts (EA), which heavily relied on microtransaction models in its most recent games. EA's problems came to a head in November 2017 with the beta test of *Star Wars: Battlefront II*, which initially placed a major emphasis on loot boxes. The firm ended up scrapping the microtransaction system just before final release due to consumer outrage during the testing period, but not before it caused a storm of controversy among gamers and policymakers (Kain, 2017). EA's first public response to the gaming community, in which it tried to defend its use of microtransactions against numerous fan complaints on Reddit, earned it the dubious distinction of the most downvoted comment in the website's history (Reddit, 2017). In fact, loot boxes have produced a strange and financially costly type of participation among consumers (Parent, Plangger, & Bal, 2011): Customers are using social media to engage in community activity in strongly negative ways. It has evolved into a kind of mass resistance movement in which conversations are sharply critical rather than supportive and beneficial to developers. EA lost $3.1 billion in stock value following consumer protests (Kim, 2017) and its stock price has fluctuated widely ever since. In response, EA and other companies have been revising their microtransaction systems or removing them altogether. Yet, despite these emergency measures, consumer confidence has decreased substantially and there may be long-term damage to several major brands.

Perhaps the most important effect of the *Battlefront II* saga is that it provided a new motivation for calls to regulate the video game industry. Although consumers are already voting with their wallets to punish EA and other developers for relying on microtransactions—to the point that these systems are now being scaled back or dropped entirely—public investigations and pressures to legislate have spread around the world (Khan, 2018; McWhertor, 2018). Loot boxes have received an enormous amount of media coverage and the issue has rapidly become a cause célèbre in political circles. In November 2017, Hawaii state representative Chris Lee held a press conference to propose legislation to regulate loot boxes and, in February 2018, Senator Maggie Hassan of New Hampshire questioned Federal Trade Commission nominees about their willingness to investigate the problem. Other politicians and regulators around the world have responded by holding hearings, publishing studies, issuing position papers, and drafting regulatory legislation about microtransactions and about loot boxes in particular. Understanding the implications of these trends is vital for managers working in and around the industry who must face the consequences of the public outcry.

From a managerial perspective, the controversy raises important questions about the present and future of the video game industry, especially the relationships between managers, technology, consumers, and regulation. What is the economic rationale for microtransactions and loot box revenue models, and are these models viable in the long term? What is the legal rationale for restricting the use or accessibility of loot boxes? Is there a possibility for managers at any level to self-regulate to limit the potential harm caused by loot boxes? This article explores these questions and distils from them some practical strategic lessons. I have two main goals: first, to survey the global regulatory environment as it relates to loot boxes. Practitioners must understand this evolving space if they are to maintain competitive advantage in the video game industry or in complementary sectors. My second goal is to explore industry- and firm-level initiatives toward the self-regulation of loot boxes, which at the moment are the main alternatives to government regulation.[1]

The size of the video game industry and its economic and cultural importance make its managerial problems worthy of study in their own right. However, the significance of gaming for management researchers and practitioners extends much further than the entertainment market. Gaming is only one of many technology-driven industries in which innovation drives experimentation with alternative business models that can create legal and regulatory grey areas around the customer's experience. Games especially highlight the managerial challenges of self-regulation in a highly uncertain environment. Like Uber entering the taxi industry (Posen, 2015), the emergence of cryptocurrencies (Hughes, 2017), or the ongoing efforts to commercialize 3-D printing (Ben-Ner & Siemsen, 2017), loot

[1] Because loot boxes are a relatively new type of revenue model, there is little peer-reviewed research studying them. As a result, in addition to these works, the source material for this article consists of reports from government regulatory bodies together with legal decisions, professional commentaries, and news articles (particularly any that include original content such as interviews with industry leaders).

boxes are innovations that cannot easily be looked at through the lens of current laws and regulations.

## 2. A primer on microtransactions and loot boxes

*Microtransaction* is an umbrella term that covers a wide range of purchases within video games. As defined by Schwiddessen and Karius (2018, p. 18), a microtransaction:

> Commonly refers to a business model . . . where users can purchase virtual goods via micropayments . . . Microtransactions (i.e., premium content) may include downloadable content such as story extensions (so called 'DLCs'), additional play time, levels, new maps, virtual currency, weapons, armor, characters, or cosmetic items to customize the player's character or items. The player pays . . . either directly with real world currency or with some form of fantasy virtual currency (e.g., gold). The latter is typically earned during gameplay or can (often alternatively) be purchased with real world money.

The ability to make small payments for in-game content is not controversial as such, but certain types of microtransactions are thought to provide unfair advantages or even violate specific laws. The most prominent examples are loot boxes, which have appeared in many recent popular games and franchises, including *Call of Duty: WWII*, *Counter-Strike: Global Offensive*, *Destiny 2*, *Dota 2*, *FIFA 18*, *FIFA 19*, *Fortnite*, *Hearthstone*, *Heroes of the Storm*, *Middle Earth: Shadow of War*, *Need for Speed: Payback*, *PlayerUnknown's Battlegrounds*, *Overwatch*, *NBA 2K18*, and *Rocket League*.[2] What are loot boxes, exactly? As explained by Schwiddessen and Karius (2018, p. 18):

> The term 'loot box', also known as 'loot crate' or 'prize crate' and other names, typically refers to a consumable virtual item which can be redeemed to receive a randomized selection of further virtual items, ranging from simple customization options for a player's game character, to game-changing equipment such as weapons, armor, virtual currency, additional skills, and even completely new or exclusive characters . . . Loot boxes can be differentiated in two categories: Those dropping cosmetic items (the latter . . . often referred to as 'skins') and those generating items relevant for gameplay progress.

The key term in the definition is 'randomized'. Loot boxes are like the proverbial box of chocolates: You never know what you are going to get. The most sought-after rewards are rare and, barring a run of good luck, can only be obtained by repeatedly opening loot boxes, which requires significant time or money. It is also usually possible—and likely—to receive duplicate or low-value loot, providing further incentives to keep trying for more valuable items. Opening a loot box is an event in itself and is typically accompanied by lights, sounds, and other effects intended to make the experience exciting. As a result, a sort of cottage industry has emerged on YouTube and other sites in which players record videos of themselves opening loot boxes for viewers' entertainment. Players can sometimes trade loot with each other within a game or through third-party platforms outside of it, meaning that in some cases rewards can be monetized (though this usually violates game operators' terms and conditions). Secondary markets have emerged in which skins—which can be extremely valuable—are traded between players, sold for cash, or wagered in online lotteries.

As mentioned above, loot can be cosmetic or it can influence gameplay progress. In the latter case, players face a trade-off between spending money and spending time to stay competitive. A strong incentive exists to pay rather than play because gamers who grind to unlock content by completing in-game challenges are at a disadvantage compared to those who obtain the same rewards instantly with cash. Many players have complained that microtransaction systems are unfair because they encourage paying to win rather than earning rewards through grinding and unlocking (i.e., through skilled play). A related complaint is that microtransactions are deceptive because they require gamers to pay an additional, hidden price on top of a game's sticker price because the full game can only be experienced by acquiring loot solely obtained—quickly, at least—via microtransactions (see Donnelly, 2018).[3]

These criticisms are common among players and helped drive the initial loot box controversy. However, unfair gameplay is not the only reason microtransactions are criticized. Legislators around the world have attacked publishers like EA on the

[2] For histories of loot boxes in games, see Schwiddessen and Karius (2018) and Wright (2017).

[3] See the comments by developer Marcin Iwiński, quoted in Donnelly (2018). To some extent this criticism begs the question, as it takes for granted the definition of a "full" game, which is one of the points under debate.

grounds that loot boxes are predatory and are a kind of gambling that encourage addictive spending. As is common in cases of alleged consumer exploitation, the targets of predatory loot boxes are said to be children who are victimized by unscrupulous marketing tactics. It is easy and even addictive for children to use a parent's credit card to purchase a nearly endless stream of loot boxes in the nearly hopeless pursuit of rare rewards, or even just for the thrill of opening them. Both the joy of winning and the frustration of missing out on rare loot could encourage further play and further spending. Whether these specific criticisms are justified or not, one point on which all parties agree is that loot boxes and similar microtransactions are highly lucrative. Total spend on loot boxes and skins gambling in 2018 approached $30 billion, and could reach $50 billion by 2022 (Juniper Research, 2018). The conventional explanation for the explosion of interest in microtransactions at the firm level is the ballooning cost of game development. Faced with longer development times and meeting expensive technological and legal requirements, many game companies are looking for ways to augment traditional sales, especially through consistent revenue streams that require relatively little support or upkeep (Boyd, Pyne, & Kane, 2019; Schwiddessen & Karius, 2018).[4]

## 3. Public regulation of loot boxes

Regulators have focused on two issues in particular that could bring loot boxes within the scope of their operations: gambling and consumer exploitation. The first is straightforward. If loot boxes are legally equivalent to gambling, then they will be licensed and regulated as such. The second point involves broader questions about consumer welfare, including whether loot boxes encourage addictive behavior, are marketed deceptively, or take advantage of children—especially through addiction or false advertising.

As yet, there is no definitive evidence to support or refute these criticisms. Several conceptual models of the similarities between loot boxes and gambling—and by extension, compulsive behavior—have been suggested, but none have been validated (e.g., Drummond & Sauer, 2018; Griffiths, 2018; Netherlands Gaming Authority, 2018; Zendle & Cairns, 2018).[5] Because there is no empirical research on the addictive properties of loot boxes, most discussions focus on definitions of gambling. Here, answers differ by region. Different countries or U.S. states use different definitions of gambling but they tend to be based on a few common concerns. These include the problem of whether loot boxes are things of value as in a conventional wager, whether they can be converted into real-world currency, and whether buying a box can result in a loss for the player. Once again though, there are no universal answers because there are differences between loot boxes (e.g., in the availability of second-hand markets for loot) in addition to differences between regional gambling definitions and regulatory interpretations.

Table 1 lists some of the approaches taken by various state, regional, and national regulators toward loot boxes. It reveals that there is no consensus yet about the legal or behavioral implications of microtransactions. Furthermore, some investigations are ongoing, meaning that even those regulators who have voiced strong opinions might take different stances in the future. As a result, the loot box phenomenon and the general competitive environment are surrounded with uncertainty.

The majority of early legislative action involving loot boxes occurred in the U.S., which comes as no surprise given the size of its gaming market and its role as home to many large developers and publishers. However, even though several state-level proposals have failed to become law, they have nevertheless provided blueprints for action in other regions. Age and advertising restrictions, new content and ratings labels, mandatory publication of odds, and outright bans are all being considered or actively enforced in other countries (Schwiddessen & Karius, 2018). There is also good reason to expect that state legislation will remain on the table: The 2018 Supreme Court decision to overturn the federal ban on sports betting means many states will soon reconsider their gambling legislation (*Murphy v. National Collegiate Athletic Association*, 2018). This will likely accelerate the growth of e-sports gambling alongside traditional sports gambling and will also give policymakers more opportunity to revise existing laws to include microtransactions (Newcomer, 2018).

[4] Although some developers have successfully implemented "pay-what-you-wish" and similar models, they are relatively rare and tend to make the most sense for smaller independent studios (Groening & Mills, 2017).

[5] The first attempt at empirical work in this area is Zendle and Cairns (2018). However, this paper suffers from several important limitations, particularly in sampling and interpretation of the data studied.

**Table 1. Regulatory opinions, actions, and policies regarding loot boxes**

| Country/State | Legal Opinion or Regulatory Action | Current Policy |
|---|---|---|
| Australia | Loot boxes can be gambling | Recommend further investigation |
| Belgium | Loot boxes can be gambling | Recommend banning loot boxes |
| China | Loot boxes can involve gambling | • Developers must publish all reward lists and drop rates for loot boxes<br>• Purchase of loot boxes with cash is prohibited<br>• Transfer of virtual currency is prohibited |
| Denmark | Loot boxes may involve gambling | Recommend caution from parents |
| Germany | Loot boxes can violate laws regarding advertising to children, or harming them | Decisions made on a case-by-case basis |
| Isle of Man | • Convertible and nonconvertible currencies are considered "money's worth"<br>• Loot boxes can involve gambling | • Revision and clarification of gambling laws is ongoing<br>• Limited jurisdiction to regulate foreign companies if/when loot boxes are gambling |
| Japan | "Kompu gacha" loot boxes are exploitative | Ban "kompu gacha" loot boxes |
| Netherlands | Loot boxes can be gambling | Ban gambling-based loot boxes |
| New Zealand | Loot boxes are not gambling | N/A |
| South Korea | Loot boxes can involve false advertising | Fines for developers |
| Sweden | Loot boxes are not gambling | Open to further investigation |
| United Kingdom | • Loot boxes are not necessarily gambling<br>• Third-party markets for loot boxes can be gambling | • Recommend caution from parents<br>• Prosecute unlicensed gambling<br>• Parliamentary investigation |
| California | Bill proposed to require packaging to clearly state whether a game includes microtransactions | Bill allowed to die |
| Hawaii | Bills proposed to regulate loot boxes by:<br>• Restricting sale of games with direct or indirect convertibility of items into cash to persons of 21 years of age or older<br>• Requiring publishers to disclose draw rates for loot boxes<br>• Requiring that games with "gambling-like" mechanisms have clearly marked packaging | Bills allowed to die |
| Minnesota | Bill proposed to:<br>• Require packaging to clearly state if a game contains potentially addictive mechanisms or could encourage large financial risks<br>• Restrict all games with purchases of randomized rewards to persons of 18 years of age or older | Bill referred to committee |
| Washington | Bill proposed to charge the Gambling Commission to investigate loot boxes and recommend possible policy responses | Bill failed to advance through committee stage |

Sources: Akimoto (2012); Cross (2017); Danish Gambling Authority (2017); Gaming Commission (2018); Netherlands Gaming Authority (2018); Isle of Man Gambling Supervision Commission (2016); Office of the eSafety Commissioner (n.d.); Pillar Legal (2017); Schwiddessen and Karius (2018); Sohn (2018)

There is also the possibility of regulation at the national level if federal agencies decide loot boxes fall within their respective remits (e.g., if they are thought to cause harm to consumers). There is already interest in this approach. To take an example mentioned above, in early 2018 in a public hearing, Senator Maggie Hassan asked Federal Trade Commission nominees whether they would be willing to investigate loot boxes in the interest of consumer safety, and all four candidates questioned said they would (Orland, 2018). In November 2018, FTC Chairman Joseph Simons gave a general indication that he would be willing to follow up on the issue, though without stating how or when (Campbell, 2018). Regulating microtransactions fits in with the FTC's recent interests, as it has already investigated sponsored content in the video game industry (Federal Trade Commission, 2016a) and established a 20-year oversight period for the popular online content creator Machinima (Federal Trade Commission, 2016b).

It is unlikely, for the moment at least, that loot boxes will be declared gambling in the U.S. Several recent decisions in district courts have exonerated similar mechanics from the gambling charge, so precedents do exist for protecting loot boxes against game licensing laws (Schwiddessen & Karius, 2018). Nevertheless, these earlier cases involved games in which the rewards could not be considered things of value. If loot box rewards can be traded for cash or if they are deemed valuable because they extend gameplay (similar to winning a free spin at a slot machine), these decisions may be overturned.[6]

The most commonly discussed regulatory decisions involve Belgium and the Netherlands, which are so far the only two countries that have taken serious action. Most notably, the Belgium Gambling Commission has demanded loot boxes be removed from games in Belgium and so far, all developers have complied, albeit reluctantly; in September 2018, the Belgian press reported that the Commission was trying to bring a case against EA for refusing to comply with the directive (Valentine, 2018). Eventually though, the company gave in to the Commission's demands. It remains to be seen though whether existing law will be clarified or modified. In the Netherlands, judgment has been more reserved but the general ruling of its Gaming Authority is that any loot boxes redeemable for cash constitute illegal gambling (Netherlands Gaming Authority, 2018).

Other countries have taken indirect or partial action to restrict loot boxes. In the UK, some third-party loot dealers have been prosecuted for operating unlicensed gambling operations and, in 2012, Japan declared kompu gacha or complete gacha games illegal.[7] Other countries are encouraging parents to be cautious and to educate themselves and their children regarding the possible dangers of loot boxes.

## 4. Industry self-regulation of loot boxes

There is, at present, no strong evidence linking loot boxes to problematic gambling behaviors. As a result, the case for government regulation is still a work in progress as serious public harm has not been demonstrated. Consumer dissatisfaction with loot boxes is widespread, helping to drive calls for self-regulation as well as for political action in all instances in which self-regulation is thought to have failed. Whether public or private, all parties seem to agree that something must be done (King & Delfabbro, 2018).

This section focuses on the prospects of self-regulation: the extent to which the gaming industry is willing and able to resolve its conflicts with customers and regulators, including by preemptively mitigating the potentially negative effects of loot boxes. I explain various ways in which self-regulation is limiting the use of loot boxes in order to restore consumer confidence. Self-regulation has been the prevailing rule in the video game industry since the 1990s, when controversies broke out over the link between games and violence. These controversies gave rise to the current system of content ratings, one of the most notable forms of self-regulation.

### 4.1. Content ratings organizations: ESRB and PEGI

The Entertainment Software Rating Board (ESRB) is a nonprofit organization that plays a major role in supporting self-regulation in the U.S. Most notably, the ESRB publishes a detailed content classification and rating system designed to help parents make informed decisions about the games their children play. The ESRB system has two content descriptors related to gambling: simulated gambling and real

[6] See, for example, *Kater v. Churchill Downs Inc.* (2018).

[7] Kompu gacha involves a special type of loot box with rare rewards that can only be unlocked by first acquiring a collection of other items from loot boxes.

gambling (Entertainment Software Rating Board, 2018a). Any game featuring the latter always receives an Adults Only rating. Thus far, the ESRB has taken the stance that loot boxes are not gambling (Schreier, 2017). Its logic is that players are guaranteed to win something from every loot box and, unlike gambling in a casino, losing is impossible in absolute terms. Despite this position, the ESRB is searching for ways to deal with the challenge posed by loot boxes. In February 2018, the board announced that, in the future, a special label indicating the availability of in-game purchases will be placed on physical copies of any games that feature microtransactions with real cash (Entertainment Software Rating Board, 2018b). This label will alert parents and other concerned parties about the potential to spend additional money in the game, regardless of the legal status of loot boxes or their psychological effects. The ESRB has also launched a website devoted to helping parents learn about and monitor their children's spending.

The ESRB is administered by the Entertainment Software Association (ESA), the major trade association for the video game industry in the U.S. In 2018, an ESA spokesperson declared (Taylor, 2018): "We strongly believe that the industry's robust, self-regulatory efforts remain the most effective way to address these important issues, and that system has a proven and long record of doing so." Mike Gallagher, president of the ESA, has also reaffirmed the organization's commitment to self-regulation and pointed to the new classification scheme as an example of a timely and effective response to a customer problem. In his words (Handrahan, 2017):

> The controversy erupted in November [2017], and by April 1 we had implemented significant changes to the ratings system in the U.S. that were designed exactly to address the challenge—which is, what are we doing proactively, on our own as an industry, to respond?

Gallagher's observation highlights the importance of quick and decisive action to support consumer-oriented self-regulation, and hints that public regulators trying to influence the industry from the outside face special difficulties, such as delays in the legal process, that make their efforts less effective.

The Pan-European Game Information (PEGI) age rating system is used in at least 37 countries in and around the European Union. Like the ESRB, it is a self-regulatory measure provided by a nonprofit organization. PEGI also uses similar content descriptors such as a general label for gambling that covers any game elements "that encourage or teach gambling" (Pan-European Game Information, 2018a). To complement this descriptor, in August 2018 PEGI also introduced a label for physical games indicating in-game purchase availability. The same descriptor was already in place for digital-only games (Pan-European Game Information, 2018b).[8]

Local initiatives for greater transparency are also underway in other countries. South Korea's self-regulatory organization K-Games encourages companies to reveal the content and drop rates of loot box items (Korea Association of Game Industry, 2018). Higher level initiatives also exist, including the International Age Rating Coalition (IARC), a collaborative effort between the ESRB, PEGI, and several other regional ratings systems. The IARC is designed to provide a more consistent, streamlined process for classifying games. The coalition has yet to make an official comment on loot boxes but will likely follow the lead taken by the ESRB and PEGI.

### 4.2. Company-level initiatives

Individual firms have also taken action to limit the fallout from microtransactions and loot boxes. These include strategic industry partners like Apple, which is not a game developer but does provide a sales platform for publishers. In late 2017, Apple announced a change to its terms and conditions: any game sold in its App Store that offers "loot boxes or other mechanisms that provide randomized virtual items for purchase must disclose the odds of receiving each type of item to customers prior to purchase" (Apple, 2019). Apple's new policy is an example of how major players can place additional pressure on developers and publishers to the benefit of consumers. It will be most relevant for companies like Valve, owner of the Steam platform, which hosts its own original games and player communities as well as an enormous amount of third-party content. Valve's own games, especially *Counter-Strike: Global Offensive*, were some of the most successful early adopters of the loot box model and even though Valve is fighting illegal skins gambling

[8] The line between public and self-regulation is sometimes blurry. For instance, in the UK the PEGI system is applied by the Video Standards Council (VSC). The VSC is an independent non-profit privately funded through fees from developers who pay to be classified using PEGI (VSC, 2018). However, the VSC does have a statutory connection: in 2012, it was selected (under the Video Recordings Act of 1984) to be the designated body responsible for rating video games. Furthermore, the VSC reports on its activities to the Department for Digital, Culture, Media and Sport, which also oversees the UK Gambling Commission. So while the VSC is a private organization and should be considered a self-regulatory effort, it is still subject to some oversight.

(Lee, 2016), Steam nevertheless remains a hub for skin collectors and traders.

Even though leading industry figures like Karl Slatoff, president of Take-Two Interactive, do not believe loot boxes are gambling (Khan, 2017), developers are nevertheless taking action. EA's *Star Wars: Battlefront II*, which ignited the controversy, removed its loot boxes before the game was officially released. The publisher's latest major release, *Battlefield V*, features a split system in which real currency can only be used for cosmetic items, while earned in-game currency can be used for all content (McArthur, 2018). Titles like *Middle Earth: Shadow of War* and *Quake Champions* also eliminated loot boxes after release (Bethesda, 2018; McWhertor, 2018).

Other developers like Turn 10 are experimenting with ways to get the best of both worlds. Turn 10 removed loot boxes from *Forza Motorsport 7* and replaced them with a race shop that simply sells the same loot box rewards outright. The shop's inventory changes every 6 minutes, giving players a sense of excitement and urgency similar to opening a loot box but without requiring them to make a risky purchase; instead, the risk is transferred to the shifting inventory selection. In addition, Turn 10 completely removed all rewards that affect gameplay so that shop inventory now consists entirely of cosmetic items. This choice highlights one difference between customer and regulator complaints about loot boxes: Although emphasizing cosmetic items can allay gamers' fears about unfairness and pay-to-win, it has no bearing on the claim that loot boxes are gambling or are otherwise harmful. The lesson for managers in similar industries is that not all complaints are created equal, and there is a difference between increasing the value of a product for consumers and bringing it in line with regulation. In any case, the newest entry in the *Forza* series, *Forza Horizon 4* (developed by Playground Games), has also been tweaked to remove the ability to use real-world cash to pay for in-game currency (Hartman, 2018).

Still other developers are improving transparency in response to complaints. For example, before the 2017 controversy got under way, Blizzard had already revised the rules of its popular game *Overwatch* to reduce the odds of winning duplicate rewards, while also publishing the odds for winning in-game currency (Barrett, 2017). Publishing loot box odds—that is, draw rates—has become increasingly common. EA revealed the odds for *FIFA 19* (Haydn, 2018) and Psyonix has done the same for *Rocket League* (Connors, 2018).

Consumers also devote time and effort into making loot box odds more transparent. Devoted fans or critics calculate draw rates based on their own experiences and regularly post results to popular websites like Reddit where they are discussed and refined; the information quickly spreads around the world and odds in different regions are compared (e.g., Reddit, 2016). This facilitates accountability and encourages developers to be open and honest while also spreading valuable information between consumers about which games or microtransactions provide the best value for money. It is also an example of positive willingness to participate—that is, participation that encourages beneficial conversations with developers (Parent, Plangger, & Bal, 2011)—among consumers.

The fact that some platforms and developers are implementing new standards indicates that self-regulation is being taken seriously. It also hints at a broader lesson: Regulatory measures often work best when they are adopted voluntarily by managers. Change is more effective when firms seek it earnestly rather than when it is forced upon them externally. Imposing regulation often incentivizes following the letter of the law rather than its spirit. Blizzard's *Overwatch* is a case in point. In early 2017, China began requiring developers to publish draw rates and other relevant information pertaining to loot box prizes (Pearson, 2016). Although Blizzard initially complied for *Overwatch*, *Hearthstone*, and *Heroes of the Storm* (Blizzard, 2017a), it soon changed the purchasing options for *Overwatch* to allow for continued use of loot boxes without publishing draw rates (Handrahan, 2018). The key point is that the regulations stated that odds must be published whenever a product is sold that uses a random mechanism for selecting prizes. In response, rather than asking players to pay for loot boxes directly, Blizzard began charging money for in-game currency while providing loot boxes as an added bonus for making the purchase technically free of charge (Blizzard, 2017b). In other words, in-practice loot box mechanics remained roughly the same but Blizzard still complied with the letter of the law.

One takeaway is that entrepreneurs and managers on the ground can tweak the technical details of revenue models to adapt to customers faster than laws can be changed to adapt to new market conditions and business strategies. It is also important to note that Blizzard's pricing experiment occurred several months before the storm of bad publicity surrounding *Star Wars: Battlefront II* launched the global loot box controversy and widespread consumer dissatisfaction peaked. Furthermore, despite its place at the center of the controversy, EA's fast action ironically helps reinforce the idea that businesses are able to respond to unhappy consumers quickly and effectively, usually more so than regulators.

Managers can draw lessons from unique aspects of the loot box case as well as from its parallels to other controversies. One important insight relates to the fact that loot boxes are unpopular among both gamers and regulators who have made an informal alliance against developers and publishers. This contrasts sharply with the case of a company like Uber, which is the target of regulatory efforts but nevertheless delivers a valuable service to customers who are often quite loyal. Loot boxes, though, are dismissed as little more than tools for exploiting players—children, even—for easy profits. The warning for managers in all industries then is that the economic problems they face are not always obvious to customers who may not understand why experimenting with revenue models like microtransactions is necessary—if indeed it is. Transparency is vital for ensuring that businesses do not wind up waging two-front wars against regulators and their own customers.

Developers are beginning to understand that the loot box controversy is different from typical customer dissatisfaction. Rather than simply demanding a recall or refund for a faulty product, or a patch to fix a bug, gamers are agitating for regulation of the entire industry on the grounds that the product is inherently deceptive or dangerous, in addition to possibly influencing the basic fairness of competitive gaming. This threat extends far beyond conventional market uncertainty, as political action has serious long-term implications for business models in the industry. Self-regulation remains the industry's primary method for avoiding commercial and legal threats and even though the ultimate effects of current initiatives are unclear, they remain the industry's best hope for independence.

## 5. What can managers do?

Loot boxes are only the most recent example of the tensions that can arise between managers, consumers, and regulators, especially when new technologies are constantly shifting the responsibilities and incentives of each group. The past decade yielded numerous examples:

- Companies like Uber have leveraged new technologies to enter established and monopolized industries and caused consternation among policymakers who struggle to apply obsolete legal definitions and regulations to new cases (Posen, 2015);
- Commercial 3-D printing poses a threat to the enforcement of traditional intellectual property laws, which were written before the digital era drastically reduced the difficulties of creating and copying content (Ben-Ner & Siemsen, 2017); and
- Cryptocurrencies operate in legislative grey areas in which their highly decentralized nature makes applying and enforcing existing regulatory frameworks impossible (Hughes, 2017).

Microtransactions and loot boxes are radically altering decades-old business models in the game industry, and the result has been confusion and anger among consumers and opportunism among regulators. This is partly to be expected, as long-standing perceptions of how the gaming business works are being altered. Change breeds resistance but it is not always benign; change carries costs and consequences. A mismatch exists in how consumers, regulators, and developers understand the industry, resulting in legal ambiguity and an uncertain external environment. Despite this challenge, however, developers have continued to experiment with new types of revenue streams and proven to be at least somewhat responsive to consumer concerns.[9]

### 5.1. Dealing with regulation

The public discussion of loot boxes has led some commentators to suggest that this is a watershed moment in the industry when it is finally obliged to accept regulatory oversight. Yet, no matter how the controversy ends, its immediate result has been to once again subject the video game industry to public scrutiny and it is unlikely that calls for regulation will disappear any time soon. As one industry lawyer put it: "There's an old saying, 'You may not be interested in politics, but politics are interested in you.' The same thing applies here: You may not be interested in gambling regulation, but gambling regulators are interested in you" (Lumb, 2018). It is vital that developers prepare to meet the challenges posed by regulation, especially by acknowledging that loot boxes are controversial, even if evidence of public harm is lacking. The same is true for any business selling a controversial product. Making a case using scientific evidence—or pointing out the lack thereof—may not be enough to avoid regulation. Possible threats to public welfare are still being investigated and much outrage derives

[9] As yet, there is no movement to completely and permanently abandon microtransactions or loot boxes.

from frustrated customers who are demanding legal solutions to poor management decisions. Fortunately, the game industry is working to develop viable strategies in response.

First, publishers are rethinking their international game development and distribution strategies in light of the inconsistent and evolving views of regulators. This means dedicating resources to navigate region-specific legal issues like gambling definitions, a challenge that will continue to require investment even if new regulations never materialize. Regional authorities have limited abilities to regulate foreign businesses, so it is crucial to understand what does and does not fall within their scope. Coordination between publishers and developers is absolutely crucial, for instance, for companies like DICE, the EA subsidiary that developed *Battlefront II*. DICE is based in Sweden, where the relevant gambling legislation is the Swedish Lotteries Act. The Act applies to companies like DICE with main operations in Sweden but not to parent companies like EA that are based in the U.S. (Schwiddessen & Karius, 2018). In other words, if loot boxes are a form of gambling, Swedish companies face different restrictions from foreign firms selling similar products. Gaming is a truly international industry, and many large firms have local offices, subsidiaries, and strategic partners, any of which might be subject to oversight. Naturally, the same caution is vital for many other cross-border businesses.

Second, firms that offer products as controversial as loot boxes can only avoid external regulation by seizing the initiative to self-regulate. The video game industry did exactly this in the 1990s when faced with claims about games and violence, and it is trying to repeat its success in response to the loot box controversy. There are no painless remedies though. Effective action requires transparency from developers about how they use microtransactions, specifically regarding whether they are economically necessary and the extent to which games rely on them for revenue. It will also be necessary to preempt public policy with private initiatives, as in the case of updating content ratings and voluntarily publishing draw rates. Microtransactions can also be scaled back or removed altogether, at least until consumer confidence returns. Each of these options is being trialed in one way or another by trade organizations and individual developers. And any of them can go a long way toward keeping the industry independent, competitive, and positively engaged with consumers. A more general conclusion for businesses in other sectors is that openness to new methods and a willingness to experiment are the guiding principles in this space in which forming a customer-experience-focused strategy is vital and "there are many stakeholders involved . . . there is no single right answer, and the path forward can only be found through iterating, learning, and trying again" (Kim, Beckman, & Agogino, 2018).

Third, developers and publishers must take account of the complex relationships between customer and regulatory complaints. This includes recognizing the range of criticisms microtransactions currently face and crafting specific responses to issues raised by different stakeholders (e.g., claims about fairness versus those about gambling). Using loot boxes for cosmetic items only will help defuse the fairness claims but not necessarily those about gambling. Yet, the controversy also requires grappling with a new problem: In addition to airing their own grievances, gamers have been willing to adopt regulators' arguments and use them to endorse oversight of the industry, a possibility that they have strongly resisted in other contexts such as the censorship of violent content in games. Even committed self-regulatory efforts may not be enough to deter the combined pressure of consumers and public authorities. The broader lesson is that regulatory dynamics are complex and constantly shifting, and neither developers nor firms in other industries should rely on past customer loyalty to provide a bulwark against present regulatory efforts.

Fourth, direct involvement in supporting customer communities is increasingly important throughout the industry, especially when factors like first impressions, customer reviews, and social media word-of-mouth help shape perceptions and expectations even before a product is released (Zhu & Zhang, 2006). In the loot box case, increasing consumer confidence means showing gamers what goes on behind the scenes. They can already discover valuable information on their own by calculating and disseminating draw rates. Developers will have a much stronger position from which to argue the merits of loot boxes if they can proactively encourage transparency and accountability, for example, by revealing odds voluntarily before any customer outcry. They can also continue to encourage community development by providing forums, blogs, and other public and private means of communication with the company and between consumers. Developers are beginning to realize that maintaining good customer relationships requires more than straightforward customer service. It means empathizing with them and abandoning tone deaf, like-it-or-leave-it responses such as EA's initial and disastrous Reddit reply to the critics of *Battlefront II*.

Fifth, strategic partners in the industry can be a major help. For instance, Apple's decision to require the publication of draw rates helps all parties involved and also demonstrates a public spirit of cooperation among stakeholders. Companies like Valve could follow suit with its extremely popular Steam platform, and the same is true for other app or brick-and-mortar games stores like Google Play, GOG.com, and GameStop. As a general strategy, industry partners can help create built-in incentives to motivate developers to take greater care when marketing controversial products, which can include anything from games to unhealthy foods.

Sixth, trade associations and individual developers have already been working to repair customer relationships directly and, in most cases, have produced results more quickly than legislators or regulatory bodies. Here, developers have an advantage as they are often more flexible than public-sector organizations. They must continue to leverage their adaptability if they hope to satisfy customers and regulators. This will mean seriously evaluating if and under what conditions microtransactions provide viable and necessary long-run revenue streams. Microtransactions are a kind of ongoing experiment, and although it is inevitable that there should be uncertainty and even controversy over them, the costs to the industry will be significant if developers cannot resolve their problems, and soon.

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## References

Akimoto, A. (2012, May 16). Japan's social-gaming industry hindered by government's anti-gambling move. *Japan Times*. Available at https://www.japantimes.co.jp/life/2012/05/16/digital/japans-social-gaming-industry-hindered-by-governments-anti-gambling-move/#.W-WD_BOLSUl

Apple (2019). *App store review guidelines*. Available at https://developer.apple.com/app-store/review/guidelines/

Barrett, B. (2017, May 25). Here's what we learned from opening 50 Overwatch PTR loot boxes. *PCGamesN*. Available at https://www.pcgamesn.com/overwatch/overwatch-loot-legendary-skin-chance

Ben-Ner, A., & Siemsen, E. (2017). Decentralization and localization of production: The organizational and economic consequences of additive manufacturing (3D printing). *California Management Review, 59*(2), 5—23.

Bethesda. (2018, December 5). *FAQ: Champion progression, battle pass, and game economy update*. Available at https://quake.bethesda.net/en/news/OUFBlFVmw002kmgAACiYe

Blizzard. (2017a, March 23). 关于《守望先锋》补给抽取概率公告 [*Announcement of winning probabilities for Overwatch*]. Available at http://ow.blizzard.cn/article/news/486

Blizzard. (2017b, June 5). 中国地区补给购买方式改动—预告信息 [*Notice: Changes to China's regional purchase methods*]. Available at http://bbs.ow.blizzard.cn/forum.php?mod=viewthread&tid=748510

Boyd, G. S., Pyne, B., & Kane, S. F. (2019). *Video game law: Everything you need to know about legal and business issues in the game industry*. Boca Raton, FL: Taylor and Francis.

Campbell, C. (2018, November 27). FTC pledges loot crate investigation (update). *Polygon*. Available at https://www.polygon.com/2018/11/27/18115365/ftc-loot-crate-investigation-senator-hassan

Connors, D. (2018, July 23). Drop rates in Rocket League crates. *Rocket League*. Available at https://www.rocketleague.com/news/drop-rates-in-rocket-league-crates/

Cross, K. (2017, December 11). New Zealand says lootboxes 'do not meet the legal definition for gambling.' *Gamasutra*. Available at https://www.gamasutra.com/view/news/311463/New_Zealand_says_lootboxes_do_not_meet_the_legal_definition_for_gambling.php

Danish Gambling Authority. (2017, November 29). Udtalelse om loot boxes/loot crates. *Spillemyndigheden*. Available at https://www.spillemyndigheden.dk/nyheder/udtalelse-om-loot-boxesloot-crates

Donnelly, J. (2018, February 15). CD Projekt Red responds to loot box controversy. *PC Gamer*. Available at https://www.pcgamer.com/cd-projekt-red-responds-to-loot-box-controversy/

Drummond, A., & Sauer, J. D. (2018). Video game loot boxes are psychologically akin to gambling. *Nature Human Behaviour, 2* (8), 530—532.

Entertainment Software Rating Board. (2018a). *ESRB ratings guide*. Available at http://www.esrb.org/ratings/ratings_guide.aspx#descriptors

Entertainment Software Rating Board. (2018b). *The control is in your hands*. Available at http://www.esrb.org/parentaltools/

Federal Trade Commission. (2016a, November 21). *In the matter of Warner Bros. Home Entertainment Inc*. Available at https://www.ftc.gov/enforcement/cases-proceedings/152-3034/warner-bros-home-entertainment-inc-matter

Federal Trade Commission. (2016b). *In the matter of Machinima Inc*. Available at https://www.ftc.gov/enforcement/cases-proceedings/142-3090/machinima-inc-matter

Gaming Commission. (2018, April). *Research report on loot boxes*. Available at https://www.gamingcommission.be/opencms/export/sites/default/jhksweb_nl/documents/onderzoeksrapport-loot-boxen-Engels-publicatie.pdf

Griffiths, M. D. (2018). Is the buying of loot boxes in video games a form of gambling or gaming? *Gaming Law Review, 22*(1), 52—54.

Groening, C., & Mills, P. (2017). A guide to pay-what-you-wish pricing from the consumer's viewpoint. *Business Horizons, 60* (4), 441—445.

Handrahan, M. (2017, June 6). Blizzard avoids China's loot laws by selling Overwatch in-game currency. *GamesIndustry.biz*. Available at https://www.gamesindustry.biz/articles/2017-06-06-blizzard-avoids-chinas-loot-box-laws-by-selling-in-game-currency

Handrahan, M. (2018, May 25). ESA: We can't go to the "lowest common denominator of government" on loot boxes. *Game-*

sIndustry.biz. Available at https://www.gamesindustry.biz/articles/2018-05-25-esa-we-cant-go-to-the-lowest-common-denominator-of-government-on-loot-boxes

Hartman, A. (2018, July 26). *Forza summer update*. Available at https://forzamotorsport.net/en-us/news/Forza_Summer_Update

Haydn, T. (2018, June 29). EA Sports VP Daryl Holt on loot boxes: "Our model is sustainable." *GamesIndustry.biz*. Available at https://www.gamesindustry.biz/articles/2018-06-29-ea-sports-vp-daryl-holt-on-loot-boxes-our-model-is-sustainable

Hughes, S. D. (2017). Cryptocurrency regulations and enforcement in the US. *Western State Law Review, 45*(1), 1—28.

Isle of Man Gambling Supervision Commission. (2016). *Guidance for online gambling (amendments) regulations 2016*. Available at https://www.gov.im/media/1355106/onlinegambling-registrationandaccounts-amendment-regulations2016-guidance-notes-v2.pdf

Juniper Research. (2018). *In-game gambling: The next cash cow for publishers* [White paper]. Available at https://www.juniperresearch.com/document-library/white-papers/in-game-gambling-∼-the-next-cash-cow

Kain, E. (2017, November 17). EA removing 'Star Wars Battlefront II' micro-transactions is a victory, but the war isn't over yet. *Forbes*. Available at https://www.forbes.com/sites/erikkain/2017/11/17/rebels-destroy-star-wars-battlefront-ii-micro-transactions-but-the-war-is-far-from-over/#693fcbdbd629

Kater v. Churchill Downs Inc. (2018). United States Court of Appeals for the Ninth Circuit, No. 2:15-cv-00612-MJP.

Khan, I. (2017, November 29). Take-Two president chimes in on lootboxes, insists they're "not gambling." *GameInformer*. Available at https://www.gameinformer.com/b/news/archive/2017/11/29/take-two-president-chimes-in-on-lootboxes-insists-they-39-re-quot-not-gambling-quot.aspx?utm_content=buffer33dd4&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer

Khan, I. (2018, March 16). EA details new progression system for Battlefront II. *GameInformer*. Available at https://www.gameinformer.com/b/news/archive/2018/03/16/ea-details-new-progression-system-for-battlefront-ii.aspx

Kim, E., Beckman, S. L., & Agogino, A. (2018). Design roadmapping in an uncertain world: Implementing a customer-experience-focused strategy. *California Management Review, 61*(1), 43—70.

Kim, T. (2017, November 28). EA's day of reckoning is here after 'Star Wars' game uproar, $3 billion in stock value wiped out. *CNBC*. Available at https://www.cnbc.com/2017/11/28/eas-day-of-reckoning-is-here-after-star-wars-game-uproar.html?__source=twitter%7Cmain

King, D. L., & Delfabbro, P. H. (2018). Video game monetization (e.g., 'loot boxes'): A blueprint for practical social responsibility measures. *International Journal of Mental Health and Addiction*. Available at https://doi.org/10.1007/s11469-018-0009-3

Korea Association of Game Industry. (2018). Web board game review committee report. *KGames*. Available at http://www.gamek.or.kr/info-service/report-detail/151/

Lee, T. (2016, July 20). Valve sends cease and desists to 23 CS:GO skin betting sites. *ESPN*. Available at http://www.espn.co.uk/esports/story/_/id/17115903/valve-sends-cease-desists-23-csgo-skin-betting-sites

Lumb, D. (2018, February 24). Can legislation fix gaming's loot box problem? *Engadget*. Available at https://www.engadget.com/2018/02/24/loot-boxes-gambling-legislation/

McArthur, R. (2018). The progression system and economy of Battlefield V. *Electronic Arts Inc*. Available at https://www.ea.com/en-gb/games/battlefield/news/battlefield-5-progression-and-economy

McWhertor, M. (2018, April 3). Middle-earth: Shadow of War's microtransactions are being removed from the game. *Polygon*. Available at https://www.polygon.com/2018/4/3/17192132/middle-earth-shadow-of-war-microtransactions-removed-war-chests-gold-marketplace

Murphy v. National Collegiate Athletic Association. (2018). Unites States Supreme Court, No. 16-476.

Netherlands Gaming Authority (2018). *Study into loot boxes: A treasure or a burden?*. Available at https://kansspelautoriteit.nl/publicaties/onderzoek/

Newcomer, E. (2018, May 18). Could a wave of new gambling laws be loot boxes' undoing? *Bloomberg*. Available at https://www.bloomberg.com/news/articles/2018-05-18/could-a-wave-of-new-gambling-laws-be-loot-boxes-undoing

Office of the eSafety Commissioner. (N.d.). Online Gambling. Office of the eSafety Commissioner. Available at https://www.esafety.gov.au/education-resources/iparent/staying-safe/online-gambling

Orland, K. (2018, February 14). US Senator demands review of loot box policies, citing potential harm. *Ars Technica*. Available at https://arstechnica.com/gaming/2018/02/us-senator-demands-review-of-loot-box-policies-citing-potential-harm/

Pan-European Game Information. (2018a). *What do the labels mean?* Available at https://pegi.info/what-do-the-labels-mean

Pan-European Game Information. (2018b). *PEGI announces new content descriptor: In-game purchases*. Available at https://pegi.info/news/new-in-game-purchases-descriptor

Parent, M., Plangger, K., & Bal, A. (2011). The new WTP: Willingness to participate. *Business Horizons, 54*(3), 219—229.

Pearson, D. (2016, December 9). China forces devs to reveal loot box drop rates in game. *GamesIndustry.biz*. Available at https://www.gamesindustry.biz/articles/2016-12-09-china-forces-devs-to-reveal-loot-box-drop-rates-in-game

Pillar Legal. (2017). Legal primer: Regulation of China's digital game industry. *Pillar Legal*. Available at http://www.pillarlegalpc.com/en/publications/

Posen, H. A. (2015). Ridesharing in the sharing economy: Should regulators impose über regulations on Uber? *Iowa Law Review, 101*(1), 405—433.

Reddit. (2016, June 3). *Loot box drop rate (∼1000 boxes sample size)*. Available at https://www.reddit.com/r/Overwatch/comments/4mbpz9/loot_box_drop_rate_1000_boxes_sample_size/

Reddit. (2017, November 12). *Seriously? I paid 80$ to have Vader locked?* Available at https://www.reddit.com/r/StarWarsBattlefront/comments/7cff0b/seriously_i_paid_80_to_have_vader_locked/dppum98/

Schilling, M. A. (2003). Technological leapfrogging: Lessons from the US video game console industry. *California Management Review, 45*(3), 6—32.

Schreier, J. (2017, October 11). ESRB says it doesn't see 'loot boxes' as gambling. *Kotaku*. Available at https://kotaku.com/esrb-says-it-doesnt-see-loot-boxes-as-gambling-1819363091

Schwiddessen, S., & Karius, P. (2018). Watch your loot boxes!—Recent developments and legal assessment in selected key jurisdictions from a gambling law perspective *Interactive Entertainment Law Review, 1*(1), 17—43.

Sohn, J.-Y. (2018, April 2). Nexon Korea to challenge FTC's hefty penalty. *The Korea Herald*. Available at http://www.koreaherald.com/view.php?ud=20180402000884

Statista. (n.d.). *Value of the global video games marketfrom 2012 to 2021 (in billion U.S. dollars)*. Available at https://www.statista.com/statistics/246888/value-of-the-global-video-game-market/

Taylor, H. (2018, February 13). Hawaii proposes landmark legislation against loot boxes. *GamesIndustry.biz*. Available at https://www.gamesindustry.biz/articles/2018-02-13-hawaii-introduces-landmark-legislation-against-loot-boxes

Valentine, R. (2018, September 10). EA may go to court over loot boxes in Belgium. *GamesIndustry.biz*. Available at https://www.gamesindustry.biz/articles/2018-09-10-ea-may-go-to-court-over-loot-boxes-in-belgium

Wright, S. T. (2017, December 8). The evolution of loot boxes. *PC Gamer*. Available at https://www.pcgamer.com/the-evolution-of-loot-boxes/

Zendle, D., & Cairns, P. (2018). Video game loot boxes are linked to problem gambling: Results of a large-scale survey. *PloS one, 13*(11), e0206767.

Zhu, F., & Zhang, X. (2006). *The influence of online consumer reviews on the demand for experience goods: The case of video games* [Working Paper No. ESS-08-02]. Paris, France: Télécom Paris Tech.