

Electronic Art's Implementation of Loot Boxes: Are Loot Boxes That Can Be Purchased With Real Money Ethical?

Stuart Jonas Waller

CS 1151, Vanderbilt University

Dr. Clark Turner

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Abstract

On April 25, 2018, the Belgian Gaming Commission declared that loot boxes, a mechanic that lets players pay real money for a chance at winning virtual items in video games, constituted unregulated gambling as a result of an investigation on FIFA 18, Stars Wars Battlefront II, Overwatch, and CS:GO [20]. If loot boxes in the aforementioned games are not removed in Belgium, their publishers face jail time and fines [8].

Electronic Arts, the developers behind FIFA and Battlefront titles, argued that their loot boxes are not a form of gambling because they always guarantee a reward, but the Belgian Gaming Commission claimed that loot boxes are a game of chance, subjecting them to Belgian gambling law [21]. This paper examines how Electronic Art's implementation of loot boxes that can be purchased with real money is in violation of the Software Engineering Code of Ethics tenets 1.03 and 6.07, and therefore, unethical.

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1 FACTS

Loot boxes have become ubiquitous with Electronic Art’s video games [10]. In their popular FIFA titles, players can purchase loot boxes in the form of randomized player cards with real money, which are used to build a team of star players in a competitive mode called ”FIFA Ultimate Team” [24]. Player cards have varying levels of rarity; the higher the rarity, the lower the chance of winning said item [10]. Cards can be earned through game progression, though it can take hours of play to earn new packs [24]. In Star Wars Battlefront II, iconic characters like Darth Vader and Luke Skywalker were exclusively available through loot boxes [24].

The Belgian Gaming Commission’s investigation on FIFA 18, Stars Wars Battlefront II, Overwatch, and CS:GO focused on whether loot boxes constituted a game of chance [8]. The commission used four parameters to determine whether or not loot boxes were considered a game of chance: if there was a game element that allowed bets to be placed, with a possible profit or loss, where chance played a roll in the result. [8]. They found loot boxes that can be purchased with real money to be in violation, but loot boxes that can be earned through game progression were not [9]. If loot boxes in the aforementioned games were not removed, their publishers could be subject to up to five years in prison and a fine of up to 800,000 euros [14]. If children were involved, those punishments could be doubled [14].

After Belgium’s ruling, major video game publishers such as Blizzard, Activision, 2K, and Valve were quick to eliminate their sale of loot boxes in the country [8].

Electronic Arts was defiant and refused to remove loot boxes from their games, but were eventually forced to comply and did so on January 31, 2019 [20].

2 RESEARCH QUESTION

Is Electronic Art’s implementation of loot boxes ethical?

3 SOCIAL IMPLICATIONS

3.1 Loot Boxes Are Becoming More Prevalent in Video Games

In 2018 alone, players spent \$30 billion dollars on loot boxes [18] and Juniper Research states that loot boxes will raise the value of the digital games market to \$160 billion dollars by 2022 [21]. Without regulation, loot boxes will not be going anywhere, and will instead receive heightened presence in future video games [11]. With even more of an emphasis on loot boxes in the digital market, more people will be susceptible to spending money on loot boxes [11].

3.2 Other Countries Take Action Against Loot Boxes

The Netherlands decided that certain loot boxes constituted gambling and demanded that publishers remove them within a month [14]. A number of United States lawmakers have also introduced bills regarding loot boxes to both conduct studies on their effects and restrict minors from accessing them in video games [10]. In response to

the loot box controversy, the Entertainment Software Rating Board has added an "In-Game Purchases" label to video games containing loot boxes [14]. These are signs that publishers around the world may be forced to remove loot boxes that can be purchased with real money [8]. This would give way to new forms of game design, advertisement, item implementation, and potentially make the process of obtaining items far less transparent.

4 LITERATURE REVIEW

4.1 Ethical

Electronic Art's implementation of loot boxes that can be purchased with real money is ethical.

4.1.1 Electronic Arts

Electronic Arts stated that loot boxes are "surprise mechanics," not a form of gambling, and that its games were "developed and implemented ethically and lawfully around the world" [12].

4.2 Chief Executive Officer, Andrew Wilson

In a talk with the Chief Executive Officer of Electronic Arts, Andrew Wilson, he claimed loot boxes are different from gambling because you always get something in a loot box, and you cannot cash out for real money in return [25].

4.3 Unethical

Electronic Art's implementation of loot boxes that can be purchased with real money

is unethical.

4.3.1 Belgian Gaming Commission

The Belgian Gaming Commission found that loot boxes that can be purchased with real money in video games violate Belgian gambling laws [21]. They believe that children and adults should not be confronted with games of chance when they are looking for fun in video games and defined the practice as an illegal game of chance. [27].

4.3.2 Belgian Minister of Justice, Koen Geens

Belgian Minister of Justice, Koen Geens, stated that loot boxes especially threaten the protection of minors and vulnerable players as mixing games and gambling is "dangerous for mental health" [27].

5 HOW THE SOFTWARE ENGINEERING CODE OF ETHICS APPLIES

According to the IEEE/ACM Software Engineering Code of Ethics preamble, "software engineers shall adhere to the following Code of Ethics and Professional Practice" [36].

5.1 Adhere

"Adhere" means to "follow the practices of" [3].

5.2 Software Engineer

"Software engineers" are "people who contribute by direction participation ... to the

... design ... and testing of software systems ...” [36].

5.2.1 Direct Participation

”Direct” means ”control the operations of; manage or govern” [30]. Participation means ”the fact of taking part, as in some action or attempt” [7]. Direct participation means ”taking part in the controlling of operations.”

5.2.2 Software Systems

”Software” is defined as ”the programs and other operating information used by a computer” [7]. A ”system” is defined as ”a set of things working together as parts of a mechanism or an interconnecting network” [7]. A ”software system” is defined as ”programs working together that used by a computer.”

Video games are computer programs created by code that use hardware such as computers to run at playable frame rates [38]. In this domain, video games are software systems.

5.3 Who the Software Engineering Code of Ethics Applies to

In our domain specific version of who the Software Engineering Code applies to, it states that ”people who contribute by taking part in the controlling of operations ... to the ... design ... and testing of video game software systems shall follow the practices of the Code of Ethics and Professional Practice.”

5.4 Analysis

5.4.1 Taking Part in Design

”Design” is ”a plan or protocol for carrying out or accomplishing something” [30]. We do not know the exact details behind the software of Electronic Art’s implementation of loot boxes, but designers at Electronic Arts ”maintain and balance the core and meta-game while creating, prototyping and implementing gameplay features” [2].

Because designers at Electronic Arts are maintaining, creating, and implementing changes to their software systems, it shows Electronic Art’s plan for adjusting and advancing their software systems in search of accomplishing something and therefore a design activity.

5.4.2 Taking Part in Testing

”Testing” is a ”critical examination, observation, or evaluation” [30]. Electronic Arts has ”an evaluation process that goes on a case-by-case basis” when resolving controversies within their video games [2] and employ game testers to evaluate the performance of their video games [2]. Because Electronic Arts ”evaluates” multiple aspects of their video games, Electronic Arts is testing their video game software systems.

5.4.3 Controlling of Operations

Electronic Arts has a number of ”operation teams” and is always seeking to refine their ”planning, organization and control of key operational activities” within their hierarchy of positions [2].

5.5 Conclusion

Electronic Arts designs and tests video games, which are determined to be software systems. Because of this, Electronic Arts acts as a software engineer. Because Electronic Arts acts as a software engineer in control of their operations, Electronic Arts "shall follow the practices of the Code of Ethics and Professional Practice." As a result, we will analyze the ethics of Electronic Art's implementation of loot boxes in their video games in terms of the Software Engineering Code of Ethics.

6 ANALYSIS

6.1 Tenet 1.03

Tenet 1.03 of the Software Engineering Code of Ethics states:

[A software engineer should] "approve software only if it is <u>safe</u> , passes appropriate tests, and does not diminish the <u>quality of life</u> " [36].

6.1.1 Definitions

6.1.1.1 Safe

"Safe" can be defined as "free from harm or risk" [30]. In Electronic Art's case, they are claiming that their loot boxes are "ethical and quite fun" and that they do not constitute a form of gambling, and therefore, are "free from harm or risk" [8]. Thus, the term "safe," in the domain of Electronic Art's implementation of loot boxes, means "does not constitute a form of gambling."

6.1.1.2 Passes Appropriate Tests

For loot boxes in video games, there is no law requiring a set of tests nor has Electronic Arts published information on any sort of tests involving their implementation of loot boxes.

Because we are questioning whether Electronic Art's implementation of loot boxes is ethical, we are going to look at the definition of "gambling" as the primary argument of Electronic Art's opponents is that their implementation of loot boxes constitutes gambling. The National Academic Press defines "gambling" as "wagering money or other belongings on chance activities or events with random or uncertain outcomes" [35]. Thus, in the domain of Electronic Art's implementation of loot boxes, "passing appropriate tests" is "not wagering money on chance activities with random or uncertain outcomes."

6.1.1.3 Quality of Life

"Quality of life" is "the general well-being of a person or society, defined in terms of health and happiness" [29]. Electronic Art's implementation of loot boxes effects players who interact with the mechanic in-game. Players who spend money on loot boxes will either be "happy" or disappointed about the reward. If they spend a lot of money, their "general well-being" may be at stake. If they get the reward they want, their "health and happiness" may increase. Thus, the "quality of life" means the "health and happiness of people who play Electronic Art's games with purchasable loot boxes."

6.1.2 Domain Specific Rule

Tenet 1.03 of the Software Engineering Code of Ethics can be restated as:

Electronic Arts should "approve video game software only if it does not constitute a form of gambling, not wager money on chance activities with random or uncertain outcomes, and does not diminish the <u>health and happiness</u> of people who play Electronic Art's games with purchasable loot boxes."
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sity and Dr. Paul Cairns of the University of York suggests that loot boxes can lead to problem gambling, a "form of gambling" that allows companies to exploit serious gambling problems amongst their consumers [28]. The two stated that the correlation between loot boxes and gambling is "stronger than previously observed relationships between problem gambling and factors like alcohol abuse, drug use, and depression" [28].

6.1.2.1 A Form of Gambling

Electronic Art's Head of Legal of Government Affairs, Kerry Hopkins, compared loot boxes to Kinder Eggs, calling them "surprise mechanics" and insisting that they are "ethical" and "fun," [6]. Yes, loot boxes in Electronic Art's titles are portrayed as fun and are accompanied by celebratory audio and visual effects similar to slot machines [12]. A "slot machine" is a "gambling machine that pays off according to the matching of symbols on wheels spun by a handle." [30]. Using a gambling machine is participating in "a form of gambling."

Evidence presented in an academic journal by Aaron Drummond and James Sauer states that loot boxes and gambling share the same psychological mechanisms: the exchange of money, an unknown future, an outcome at least partially determined by random chance, a winner and a loser, and the possibility to avoid loss [21]. Loot boxes and gambling are both "forms of gambling" if they contain the same psychological mechanisms [21].

Another recent study conducted by Dr. David Zendle of York State John Univer-

6.1.2.2 Wager Money on Chance Activities

As stated in Section 2, players can purchase loot boxes in the form of randomized player cards with real money in Electronic Art's FIFA titles [24]. Player cards have varying levels of rarity; the higher the rarity, the lower the chance of winning said item [10]. Many players have a less than 1% chance of being obtained [24]. Players "purchase loot boxes ... with real money" for "the chance of winning," therefore, players "wager money on chance activities" when they purchase Electronic Art's loot boxes.

Speaking of winning, both Act and Rule Utilitarianism want the most utility. Act Utilitarianism claims the right action is one that yields the most utility [4]. The majority of the time, spending money on a loot box and receiving a worthless or cheap virtual item is a clear loss of utility for the players. If the player beats the odds and makes a profit, then utility is maximized. But for the vast majority of the time, spending money on loot boxes is unethical. Electronic Arts encourages their players to make unethical decisions.

6.1.2.3 Health and Happiness

As stated above in Section 6.1.1.3, Electronic Art’s implementation of loot boxes affects players who interact with the mechanic in-game. Players who spend money on loot boxes will either be happy or disappointed with what they receive. If they spent money and did not receive what they hoped to acquire, their “health and happiness” would be diminished. If they spent money and received what they wanted, their “health and happiness” would be increased. In both situations, their “health” would technically be diminished as money would be lost. In addition, the chances of their “health and happiness” being diminished is statistically far more likely to occur [24].

6.1.3 Conclusion

Electronic Art’s implementation of loot boxes that can be purchased with real money is unethical according to tenet 1.03.

In Section 6.1.2.1, multiple studies and examinations of loot boxes show links between loot boxes and gambling. This is in violation of the domain specific rule because the video game software should not “constitute a form of gambling.”

In Section 6.1.2.2, it explains how players purchase Electronic Art’s loot boxes with randomized chances of receiving the rewards inside. This is in violation of the domain specific rule because video game software should not “wager money on chance activities.”

In Section 6.1.2.3, it explains how players have a greater chance of diminishing their “health and happiness” when purchasing Electronic Art’s loot boxes. This is in violation of the domain specific rule because

video game software should not “diminish the health and happiness of people who play Electronic Art’s games with purchasable loot boxes.”

6.1.3.1 Extension of Conclusion

It would be interesting, however, to see if companies could modify the mechanic to make loot boxes more fair. While some game developers implement mercy rule systems that ensure high tier rewards after a certain amount of loot boxes have been opened, these “pity rates” are always obscenely high, rendering these systems close to pointless. In relation to Brooks “No Silver Bullet-Essence and accident in software engineering,” they can chip away at the issue (adjust these rates in favor of consumers, for example), but the essential difficulties, the ethical problems inherent with loot boxes, will always remain [5]. Even Nancy Leveson, a leading expert in system software, states that Safety is a system property, not a component property, and must be controlled at the system level, not the component level [13]. Video games are the system and loot boxes are the components. By Leveson’s logic, assuming loot boxes were unsafe, it would be more beneficial to remove loot boxes altogether than to attempt to regulate them and preserve their existence within the system.

6.2 Tenet 6.07

Tenet 6.07 of the Software Engineering Code of Ethics states:

[A software engineer should] "be accurate in stating the characteristics of software on which they work, avoiding not only false claims but also claims that might reasonably be supposed to be speculative, vacuous, deceptive, misleading, or doubtful" [36].

6.2.1 Definitions

6.2.1.1 Accurate in Stating The Characteristics

"Accurate" can be defined as "correct in all details; exact" [7]. "Characteristic" can be defined as "a distinguishing feature or quality" [7]. "Accurate Characteristics" can be defined as the "correct features or qualities."

For the domain of Electronic Art's implementation of loot boxes, they should strive to state the "accurate characteristics" of their loot boxes. For our domain specific rule, "accurate characteristics" is defined as the "correct features or qualities of loot boxes."

6.2.1.2 False Claims

A software engineer should avoid "false claims," meaning they should not "knowingly make, use, or cause to be made or used, a record or statement to conceal, avoid, or decrease an obligation" [31].

For the domain of Electronic Art's implementation of loot boxes, they should avoid "false claims" regarding their public statements about loot boxes. For our domain specific rule, "false claims" is defined as "making statements to conceal or avoid information regarding loot boxes."

6.2.1.3 Misleading

"Misleading" can be defined as "giving the wrong idea or impression" [7].

For the domain of Electronic Art's implementation of loot boxes, they should avoid claims that are "misleading" about their implementation of loot boxes. For our domain specific rule, "misleading" is defined as "giving the wrong idea or impression about loot boxes."

6.2.2 Domain Specific Rule

Tenet 6.07 of the Software Engineering Code of Ethics can be restated as:

Electronic Arts should state the correct features or qualities of loot boxes on which they work, avoiding not only making statements to conceal or avoid information regarding loot boxes but also claims that might reasonably be supposed to be giving the wrong idea or impression about loot boxes [36].

6.2.2.1 Correct Features or Qualities

In a response to questioning concerning the links between loot boxes and gambling, as stated in Section 6.1.2.1, Kerry Hopkins, Electronic Art's Head of Legal of Government Affairs, compared loot to Kinder Eggs, calling them "surprise mechanics" and insisting that they are "ethical" and "fun" [6]. She then elaborated on "surprise mechanics" by saying "If you go to ... a store that sells lots of toys, and you do a search for surprise toys, what you'll find is that this is something people enjoy" [6]. This is all that was said regarding any possible descriptions of the "correct features or qualities" of their loot boxes. Kerry Hopkins did not mention

any technical "features or qualities" regarding loot boxes, such as their item reward rates or in-game design.

6.2.2.2 Statements to Conceal or Avoid Information

The majority of Electronic Art's existing franchises are based on almost an entirely loot box-based monetization system [20]. At most, the money players spend on loot boxes comprises 60% of their \$5 billion total revenue in 2019 [22]. In FIFA titles alone, Electronic Arts was making \$800 million dollars from various Ultimate Teams in net revenue annually [20], up more than 20% year-on-year [1]. Another popular title by Electronic Arts, Apex Legends, reportedly made over \$90 million from in-game spending across all platforms [16].

Electronic Arts did not mention anything about how they profit from loot boxes [33]. Their public statements concerning their implementation of loot boxes and gambling were only comprised of subjective, opinion-based statements [20]. A lot of important information regarding the big picture surrounding the loot box controversy was left out. Like any business, Electronic Art's main objective is to make money. If loot boxes were not about money, Electronic Arts would make them more obtainable through gameplay.

The definition of "avoid" is "to prevent disclosure or recognition of" [30]. Electronic Arts did not "disclose" or "recognize" any monetary attachment to their implementation of loot boxes [24]. Therefore, Electronic Art's "avoided" making said statements.

6.2.2.3 Giving the Wrong Idea or Impression About Loot Boxes

Another one of Electronic Art's popular titles, Battlefront II, encouraged players to pay "hidden fees" to remain competitive [34]. The game's two currencies—credits and crystals—were earned separately; credits were earned by grinding (the act of repeatedly playing for in-game rewards), while crystals were paid for with real money [34]. These credits unlocked highly sought after in-game characters, such as Luke Skywalker and Darth Vader, which were only available in loot boxes. Players were effectively forced to exchange money for a competitive edge and "statistical advantages" [34]. This gave players with the ability to spend real money a strict advantage over players who could not afford crystals. After communal backlash, Electronic Arts gave Luke Skywalker a price of 60,000 credits, which could be earned through game progression [15]. But as users discovered, you would need to grind for 40 hours straight in order to do so efficiently. A study authored by a San Diego State University psychology professor and researcher, Jean Twenge, found that, in teens, more than five hours of video games a day is too much [17]. This would make grinding for Luke Skywalker extremely unhealthy.

On Electronic Art's website, it states that "we seek to bring choice, fairness, value and fun to our players in all our games" [2]. As described above, Electronic Arts gave players with the ability to spend money on loot boxes a strict, competitive advantage over players who cannot. That is not "fair". Players also did not have a "choice" to obtain loot boxes outside of spending money on crystals first. Playing unhealthy amounts to

obtain a character is also not "quite fun and ethical", as Electronic Arts has frequently stated (as in Sections 6.1.1.1, 6.1.2.1, and 6.2.2.1) [6]. Electronic Arts has clearly been "giving the wrong idea or impression about loot boxes."

Electronic Arts does not adhere to their principles. Deontological ethics states that the correct action adheres to rules and is considered good because of a characteristic of the action itself [4]. As explained above, Electronic Arts is not in accordance with their own mission statement. Therefore, Electronic Arts is not following the principles of deontological ethics.

6.2.3 Conclusion

Electronic Art's implementation of loot boxes that can be purchased with real money is unethical according to tenet 6.07.

In Section 6.2.2.1, Electronic Arts did not mention any technical information regarding their implementation of loot boxes. This is in violation of the domain specific rule because Electronic Arts should state the "correct features or qualities of loot boxes on which they work."

In Section 6.2.2.2, Electronic Arts did not mention anything about how their implementation of loot boxes derives revenue for the company. This is in violation of the domain specific rule because Electronic Arts should avoid "making statements to conceal or avoid information regarding loot boxes."

In Section 6.2.2.3, Electronic Arts created a system that gave players with money a strict, competitive advantage and, once implemented, made obtaining desirable characters unhealthy and unrealistic. This is not in slight accordance with their mis-

sion statement or other public statement regarding their implementation of loot boxes. This is in violation of the domain specific rule because Electronic Arts should not "be giving the wrong idea or impression about loot boxes."

7 CONCLUSION

By designing and testing video game software, Electronic Arts acts as a software engineer. As a result, Electronic Arts must ethically follow the Software Engineering Code of Ethics and Responsibilities. Electronic Art's implementation of loot boxes that can be purchased with real money is at question.

From our analysis of tenet 1.03, Electronic Art's loot boxes are in violation of tenet 1.03 as they constitute "a form of gambling" where players "wager money on chance activities." This leads to "diminishing the health and happiness" of their players.

From our analysis of tenet 6.07, Electronic Art's statements regarding their loot boxes are in violation of tenet 6.07 as they did not state "correct features or qualities," and instead made "concealing" statements where they gave "the wrong idea or impression" about loot boxes.

Loot boxes have created a powerful incentive for Electronic Arts to exploit their players for money. Paying for a game is apparently not enough. These tactics can range from giving high value items a less-than-1-percent drop rate, to portraying each opening as an exciting, joyous occasion with celebratory music and visuals [12]. In the majority of countries in the world, gambling is illegal [37]. So why is Electronic Arts al-

lowed to advertise and implement systems that are psychologically identical to gambling, but available for all ages at the click of a button [12]? The Belgian Gaming Commission's ruling to ban Electronic Art's loot boxes was a good decision. Electronic Art's implementation of loot boxes in their titles is in clear violation of tenets 1.03 and 6.07 of the Software Engineering Code of Ethics, and therefore, is unethical.

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