UNITED STATES COPYRIGHT OFFICE


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ITEM A. COMMENTER INFORMATION

These comments are respectfully submitted by Public Knowledge. Public Knowledge is a nonprofit organization dedicated to representing the public interest in digital policy debates. Public Knowledge promotes freedom of expression, an open internet, and access to affordable communications tools and creative works.

Interested parties are encouraged to contact Meredith Rose (mrose@publicknowledge.org) as Public Knowledge’s authorized representative in this matter. Public Knowledge’s contact information is as follows:

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ITEM B. PROPOSED CLASS ADDRESSED

Proposed Class 8: Computer Programs—Video Game Preservation.

ITEM C. OVERVIEW

The current exemption codified at 37 CFR 201.40(b)(8) extends only to “video games that can be played by users without accessing or reproducing copyrightable content stored or previously stored on an external computer server.” The Register should recommend an expansion to this exemption for a number of reasons. First, multiplayer games are enjoying explosive popularity both as standalone games and as major elements of otherwise single-player games, making them a prime candidate for archiving. Current trends in the market indicate that the online multiplayer format will only expand, capturing a larger swath of the literal and cultural capital currently generated by the medium. Additionally, online multiplayer games are actually
more susceptible to archival loss than “complete” games covered by the current exemption, as they can be disabled by server discontinuance or overwritten by mandatory patches and updates that change key elements of the game.

Second, multiplayer games have become hot topics of scholarship and criticism, not only in media studies, but among a diverse range of fields from epidemiology to economics to social psychology. Clearly, multiplayer games raise issues that are of interest to researchers and academics, and this interest weighs in favor of a need for preservation.

Finally, evolution in game development has increased reliance on server-side software while blurring the line between what the Office considers to be “complete” games under the current exemption, and online multiplayer formats. Locally hosted single-player games have begun to experiment with online capabilities, often incorporating minor or social elements that require communication with a multiplayer server. Although these games may look and feel like traditional single player games, they allow for player interactions in unexpected (and often mandatory) ways. As this design trend continues, more games will exist in the space between what the Office currently considers “single” and “multiplayer,” creating substantial ambiguity for archives and preservationists.

**ITEM D. TECHNOLOGICAL PROTECTION MEASURE(S) AND METHOD(S) OF CIRCUMVENTION**

Many modern video games require ongoing interaction with publisher-controlled servers to function as designed. In order to preserve this functionality, archivists and preservationists must circumvent software TPMs and install bespoke patches to enable the game software to self-authenticate, or to redirect the game to a separate archival server when the servers provided by the copyright owner are no longer operable. These patches—and the fixes required to design bespoke servers without access to the original server-side software—are immensely complex operations that require substantial time and resources to develop.

**ITEM E. ASSERTED ADVERSE EFFECTS ON NONINFRINGEMENT USES**

The Copyright Office recognized adverse effects on noninfringing uses of “complete” games in its 2015 rulemaking.1 Those effects apply with equal or greater force to games requiring communication with an online multiplayer server for the following reasons.

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1 U.S. COPYRIGHT OFFICE, SECTION 1201 RULEMAKING: SIXTH TRIENNIAL PROCEEDING TO DETERMINE EXEMPTIONS TO THE PROHIBITION ON CIRCUMVENTION: RECOMMENDATION OF THE REGISTER OF COPYRIGHTS (2015) (hereinafter “2015 Recommendations”) 346 (“To the extent that the shutdown of an authentication server bars access to a video game entirely, the record demonstrates that efforts to preserve video games will likely be impeded by the prohibition on circumvention.”)
1. Multiplayer Games Make Up An Increasingly Large Segment of the Gaming Market, and are Uniquely Susceptible to Erasure

Expanding the current exemption to cover online multiplayer games is critical because these games now occupy a vast share of the gaming market. Online functionality has become the new norm in high-budget game development, and this trend shows no sign of slowing between now and the 2021 triennial. Industry observers have noted “an overall shift among the biggest [developers of] single-player campaigns who are becoming more, if not entirely multiplayer-focused.”

“Local” multiplayer (in which two or more people played using the same copy of the game, on the same screen) has largely been phased out in favor of online modes, which allow developers to both sell more copies and bypass the design challenges of splitting a screen into multiple fragments. In the words of one publication, “[v]ideo game publishers, it appears, are putting an end to couch play.”

What was once a technological novelty has become the norm; of October 2017 sales data, 9 of the top 10 grossing PC games, and 9 of the top 10 grossing mobile games are online-only multiplayer games.

A. The trend toward multiplayer will continue because it is lucrative and popular

Online gaming generates an immense amount of revenue. In traditional single player games, a developer could sell the original game, and potentially extra “downloadable content” (or DLC) over the course of months following the game’s release. Online multiplayer requires players to remain engaged with developers by connecting to the game’s servers. This allows developers to not only farm an impressive amount of usage data, but to introduce regular content updates, and offer “microtransactions” in which customers can buy upgrades (often cosmetic) for small amounts of money.

Estimates put total revenue for only two categories of online game—“massively multiplayer online games” (MMOs) and strategy-based “multiplayer online battle arenas” (MOBAs)—at over $24.4 billion in 2014, a number which continues to grow.


5 For a more general discussion of microtransactions, see Economics of Microtransactions in Video Games, INTELLIGENT ECONOMIST (Dec. 8, 2017), https://www.intelligenteconomist.com/economics-of-microtransactions/.

6 Infographic: Global PC/MMO Gaming Revenues to Total $24.4bn This Year, NEWZOO (Nov. 17, 2014), https://newzoo.com/insights/articles/pcmmo-gaming-revenues-total-244bn-2014/.
Online games have also been the foundation of competitive gaming, or “eSports.” eSports have become so popular that in 2017, ESPN broadcast live coverage of international FIFA (video game) tournaments,7 and ESPN.com inaugurated an eSports section of its website.8 Industry analysts estimate that over 385.5 million fans—half of whom are enthusiasts—watched eSports events this year.9 In a testament to the sheer size and popularity of the genre, in 2017 alone, organized eSports tournaments distributed over $93.3 million in prize money and generated $696 million in revenue—a number projected to grow to nearly $1.8 billion by 2020.10 The largest prize pool, for Dota 2 tournament “The International 7,” was $24.8 million dollars, with the winners receiving $10.8 million (or 44%) of the whole pool.11

Increasingly available high-speed broadband has enabled more players to enjoy online games, and user data shows that gamers have embraced the format. Team-based competitive shooter Overwatch boasts 35 million players worldwide.12 MMOs regularly boast populations above one million; the largest currently running MMO, Final Fantasy XIV, crested 10 million players in August of this year.13 The culturally iconic World of Warcraft still boasted 7 million players in 2015, over a decade after its launch (and nine years after being lampooned in an Emmy-winning South Park episode).14

Even the day-to-day numbers are staggering. Sci-fi shooter Destiny 2 clocked 1.2 million concurrent players on September 9 of this year. MOBA League of Legends, a fixture in

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8 http://www.espn.com/esports/


10 *Id.* at 20, 14.


eSports, “has boasted of an eight-figure daily active user count for about five years now” and in 2014, had over 27 million unique players daily. While still remarkable, these kinds of figures are becoming increasingly common; *Minecraft*, a blockbuster “sandbox” game, has experienced multiple million-player days, while shooter *Overwatch* fielded more than 7 million unique players in its first week of operation alone.

**B. Server shutdowns and mandatory software updates have raised preservation concerns that are unique to multiplayer online games.**

It is difficult to quantify the number of multiplayer servers that have been shut down in recent years. However, Electronic Arts’ “Online Services Shutdown” list is one illustrative example. As the title suggests, the list contains the name of every game for which multiplayer server support has been discontinued since prior to 2013. The list—which is littered with popular franchises such as *FIFA World Cup, Nascar,* and *The Sims*—currently stands at 319 games and servers discontinued since 2013, or just over one game per week since 2012.

Game updates can also pose problems for archivists seeking to preserve a specific iteration of a popular game. MMO *World of Warcraft* has, over its 12-year lifespan, implemented a series of updates that has substantially changed the underlying mechanics of the game, in addition to updating its “look and feel” for to account for modern processors. In the process, the original iteration of the game, commonly known as “vanilla WoW,” was lost. A handful of players set out to recreate the experience, writing server-side code from scratch, and opened a free-to-play server named “Nostalrius” that emulated vanilla WoW with a high degree of accuracy. Although the server was (predictably) shuttered in April of 2016 after *WoW*’s developer Blizzard sent the operators a cease-and-desist notice, Nostalrius sparked a debate

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17 Good, *supra*.

18 Because the earliest category is simply labeled “Pre-2013,” it is hard to determine the exact earliest shutdown on the list.

19 **ELECTRONIC ARTS**, *Online Service Updates: Online Services Shutdown, Pre-2013*, [https://www.ea.com/service-updates/pre-2013/](https://www.ea.com/service-updates/pre-2013/).

about the tension between preservation, and mandatory updates that can overwrite software at any time.21

2. Multiplayer games have become popular topics for scholarship and comment, and their preservation is critical to comprehensive archiving

Multiplayer games, with their enormous and engaged user populations, have become mainstays of popular culture. A 2006 episode of South Park lampooning World of Warcraft (and the game’s players) won an Emmy. The episode also garnered critical acclaim, with one critic noting that “fans of South Park undoubtedly see this episode as a topical parody of one of the largest cultural phenomenon[a] in a while - can seven million people be wrong?”22

Multiplayer games have also become vehicles for serious academic research in a surprising range of fields. Economists have used MMOs to study market emergence for over a decade. In 2001, a professor at California State University, Fullerton studied market development in Norrath, the fictional world of MMO Everquest, and found that the fantasy economy was “richer” than China and India.23 In fact, if Norrath were a real nation, it would net a per-capita GNP of $2,266—“comparable to the 77th richest country on Earth and ranking it between Russia and Bulgaria.”24

Epidemiologists25 and terrorism researchers26 have also used World of Warcraft to study human behavior in outbreak scenarios, modeling disease progression by tracking the

development and spread of an in-game pandemic known as “Corrupted Blood.”

Neurobiologists have used studies of compulsive MMO players to model everything from self-image deficits to seizure progression.

The social sciences also use MMOs as living laboratories. Psychologists and addiction scientists have produced MMO-based research on cognitive overload and to develop predictive modeling for addiction susceptibility. Cognitive development specialists have used the genre to suggest ways in which individuals can develop social skills through online gaming, while educators have examined the format as a potential new venue for online learning. Even ethicists have used the game as a laboratory, studying conflict management and communicative behavior.

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3. The Distinction Between “Single Player” and “Multiplayer” is Becoming Increasingly Harder to Draw

Moreover, the line between “single player” and “multiplayer” has become increasingly blurred in recent years. Many games now exist on a spectrum, with dedicated multiplayer at one end, and connected single player at the other.

Take, for example, the wildly popular iOS game Animal Crossing: Pocket Camp. The mechanics of the game and its progression are all single-player. At no point in active gameplay must the player actually interact with another human being. However, players can engage (if they so choose) in light social networking elements, such as trading fruit, visiting other players’ campsites, and tapping a button to lend assistance in certain tasks. These functions are optional, and ancillary to the core gameplay. Despite this, the game requires a continuous, open connection to Nintendo’s servers, so that the game can synch inventory data and enable social networking functionality when the player wants it. Any loss of connection results in an error message with a suggestion to retry the connection when you have service. The result is a kind of “background multiplayer” mode; multiplayer elements are not a critical (or even substantial) part of the game, but the multiplayer server connection remains mandatory. The game generated over $10 million in sales in its first week.35

Another example is the Souls titles, a series of largely traditional sword-and-sorcery action adventure games. Players progress through a single-player game world by killing progressively more difficult monsters, collecting loot, and making their character stronger. However, the game features a number of unique elements that allow players to communicate with one another across individual games. Players can, for example, leave messages on the landscape, and those messages will appear in other players’ games. When a player dies, other players will stumble across a blood stain in the location of their death, and can “activate” the blood stain to see a shadow of that player in their final moments. They can also opt to “summon” the ghostly form of another player into their game for assistance—or, on rare occasions, “invade” another player’s game to fight them and attempt to derail their progress. There is no voice chat, so even when players briefly come face-to-face (or face-to-ghost), players can only communicate with one another through pre-recorded phrases and set gestures. The series had sold over 13 million copies by mid-2016,36 and received widespread critical acclaim.37


These and other games are largely single-player as traditionally understood, and, at first blush, would appear to fall within the existing exemption. However, design choices underlying minor features prevent them from being “complete” games in the Office’s current understanding. This result is not only counterintuitive, but, as games evolve, will make the working boundaries of the current exemption untenable.

4. Conclusion

Online multiplayer games are a dominant force in the art form, and, despite their immense financial and cultural success; unique challenges in archiving; value to researchers and scholars; and evolving functionality, preservation under the current exemption for these games is difficult-to-impossible. Given the above, the Office should expand the current exemption as proposed.

DOCUMENTARY EVIDENCE

37 See, e.g., Game of the Year 2009, GAMESPOT (Dec. 25, 2009), https://www.youtube.com/watch?v=YgYBivaVco8.