Digital games distribution: The presence of the past and the future of obsolescence

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A common criticism of the rhythm video games genre — including series like Guitar Hero and Rock Band, is that playing musical simulation games is a waste of time when you could be playing an actual guitar and learning a real skill. A more serious criticism of games cultures draws attention to the degree of e-waste they produce. E-waste or electronic waste includes mobile phones, computers, televisions and other electronic devices, containing toxic chemicals and metals whose landfill, recycling and salvaging all produce environmental and social problems. The e-waste produced by games like Guitar Hero is obvious in the regular flow of merchandising transforming computer and video games stores into simulation music stores, filled with replica guitars, drum kits, microphones and other products whose half-lives are short and whose obsolescence is anticipated in the annual cycles of consumption and disposal.

This paper explores the connection between e-waste and obsolescence in the games industry, and argues for the further consideration of consumers as part of the solution to the problem of e-waste. It uses a case study of the PC digital distribution software platform, Steam, to suggest that the digital distribution of games may offer an alternative model to market driven software and hardware obsolescence, and more generally, that such software platforms might be a place to support cultures of consumption that delay rather than promote hardware obsolescence and its inevitability as e-waste. The question is whether there exists a potential for digital distribution to be a means of not only eliminating the need to physically transport commodities (its current 'green' benefit), but also for supporting consumer practices that further reduce e-waste.

The games industry relies on a rapid production and innovation cycle, one that actively enforces hardware obsolescence. Current video game consoles, including the PlayStation 3, the Xbox 360 and Nintendo Wii, are the seventh generation of home gaming consoles to appear within forty years, and each generation is accompanied by an immense international transportation of games hardware, software (in various storage formats) and peripherals. Obsolescence also occurs at the software or content level and is significant because the games industry as a creative industry is dependent on the extensive management of multiple intellectual properties. The computing and video games software industry operates a close partnership with the hardware industry, and as such, software obsolescence directly contributes to hardware obsolescence. The obsolescence of content and the redundancy of the methods of policing its scarcity in the marketplace has been accelerated and altered by the processes of disintermediation with a range of outcomes (Flew). The music industry is perhaps the most advanced in terms of disintermediation with digital distribution at the center of the conflict between the legitimate and unauthorised access to intellectual property. This points to one issue with the hypothesis that digital distribution can lead to a reduction in hardware obsolescence, as the marketplace leader and key online distributor of music, Apple, is also the major producer of new media technologies and devices that are the paragon of stylistic obsolescence.

Stylistic obsolescence, in which fashion changes products across seasons of consumption, has long been observed as the dominant form of scaled industrial innovation (Slade). Stylistic obsolescence is differentiated from mechanical or technological obsolescence as the deliberate supersede of products by more advanced designs, better production techniques and other minor innovations. The line between the stylistic and technological obsolescence is not always clear, especially as reduced durability has become a powerful market strategy (Fitzpatrick). This occurs where the design of technologies is subsumed within the discourses of manufacturing, consumption and the logic of planned obsolescence in which the product or parts are intended to fail, degrade or under perform over time. It is especially the case with signature new media technologies such as laptop computers, mobile phones and portable games devices.

Gamers are as guilty as other consumer groups in contributing to e-waste as participants in the industry’s cycles of planned obsolescence, but some of them complicate discussions over the future of obsolescence and e-waste. Many gamers actively work to forestall the obsolescence of their games: they invest time and creative energy to the production of user-generated content as a means of sustaining involvement in gaming communities; and they produce entirely new game experiences for other users, based on existing software and hardware modifications known as 'mods'. With Guitar Hero and other ‘rhythm’ games it would be easy to argue that the hardware components of this genre have only one future: as waste. Alternatively, we could consider the actual lifespan of these objects (including their impact as e-waste) and the roles they play in the performances and practices of communities of gamers. For example, the Elmo Guitar Hero controller mod, the Tesla coil Guitar Hero controller interface, the Rock Band Speak n' Spellbinder mashup, the multiple and almost sacrilegious Fender guitar hero mods, the Guitar Hero Portable Turntable Mod and MAKE magazine’s Trumpet Hero all indicate a significant diversity of user innovation, community formation and individual investment in the post-retail life of computer and video game hardware.

Obsolescence is not just a problem for the games industry but for the computing and electronics industries more broadly as direct contributors to the social and environmental cost of electrical waste and obsolete electrical equipment. Planned obsolescence has long been the experience of gamers and computer users, as the basis of a utopian mythology of upgrades (Dovey and Kennedy). For PC users the upgrade pathway is traversed by the consumption of further hardware and software post initial purchase in a cycle of endless consumption, acquisition and waste (as older parts are replaced and eventually discarded). The accumulation and disposal of these cultural artefacts does not devalue or accrue in space or time at the same rate (Straw) and many users will persist for years, gradually upgrading and delaying obsolescence and even perpetuate the circulation of older cultural commodities. Flea markets and secondhand fairs are popular sites for the purchase of new, recent, old, and recycled computer hardware, and peripherals. Such practices and parallel markets support the strategies of 'making do' described by De Certeau, but they also continue the cycle of upgrade and obsolescence, and they are still consumed as part of the promise of the ‘new’, and the desire of a purchase that will finally 'fix' the users' computer in a state of completion (29). The planned obsolescence of new media technologies is common, but its success is mixed; for example, support for Microsoft’s operating system Windows XP was officially withdrawn in April 2009 (Robinson), but due to the popularity in low cost PC 'netbooks' outfitted with an optimised XP operating system and a less than enthusiastic response to the 'next generation' Windows Vista, XP continues to be popular.

**Digital Distribution: A Solution?**

Gamers may be able to reduce the accumulation of e-waste by supporting the disintermediation of the games retail sector by means of online distribution. Disintermediation is the establishment of a direct relationship between the creators of content and their
consumers through products and services offered by content producers (Flew 201). The move to digital distribution has already begun to reduce the need to physically handle commodities, but this currently signals only further support of planned, stylistic and technological obsolescence, increasing the rate at which the commodities for recording, storing, distributing and exhibiting digital content become e-waste. Digital distribution is sometimes overlooked as a potential means for promoting communities of user practice dedicated to e-waste reduction, at the same time it is actively employed to reduce the potential for the unregulated appropriation of content and restrict post-purchase sales through Digital Rights Management (DRM) technologies.

Distributors like Amazon.com continue to pursue commercial opportunities in linking the user to digital distribution of content via exclusive hardware and software technologies. The Amazon e-book reader, the Kindle, operates via a proprietary mobile network using a commercially run version of the wireless 3G protocols. The e-book reader is heavily encrypted with Digital Rights Management (DRM) technologies and exclusive digital book formats designed to enforce current copyright restrictions and eliminate second-hand sales, lending, and further post-purchase distribution. The success of this mode of distribution is connected to Amazon's ability to tap both the mainstream market and the consumer demand for the less-than-popular; those books, movies, music and television series that may not have been 'hits' at the time of release.

The desire to revisit forgotten niches, such as B-sides, comics, books, and older video games, suggests Chris Anderson, linked with so-called "long tail" economics. Recently Webb has queried the economic impact of the Long Tail as a business strategy, but does not deny the underlying dynamics, which suggest that content does not obsolesce in any straightforward way. Niche markets for older content are nourished by participatory cultures and Web 2.0 style online services. A good example of the Long Tail phenomenon is the recent case of the 1971 book *A Lion Called Christian*, by Anthony Burke and John Rendall, republished after the author's film of a visit to a resettled Christian in Africa was popularised on YouTube in 2008. Anderson's Long Tail theory suggests that over time a large number of items, each with unique rather than mass histories, will be subsumed as part of a larger community of consumers, including fans, collectors and everyday users with a long term interest in their use and preservation.

If digital distribution platforms can reduce e-waste, they can perhaps be fostered by to ensuring digital consumers have access to morally and ethically aware consumer decisions, but also that they enjoy traditional consumer freedoms, such as the right to sell on and change or modify their property. For it is not only the fixation on the 'next generation' that contributes to obsolescence, but also technologies like DRM systems that discourage second hand sales and restrict modification. The legislative upgrades, patches and amendments to copyright law that have attempted to maintain the law's effectiveness in competing with peer-to-peer networks have supported DRM and other intellectual property enforcement technologies, despite the difficulties that owners of intellectual property have encountered with the effectiveness of DRM systems (Moore, Creative). The games industry continues to experiment with DRM, however, this industry also stands out as one of the few to have significantly incorporated the user within the official modes of production (Moore, Commonising). Is the games industry capable (or willing) of supporting a digital delivery system that attempts to minimise or even reverse software and hardware obsolescence? We can try to answer this question by looking in detail at the biggest digital distributor of PC games, Steam.

Steam
Steam is a digital distribution system designed for the Microsoft Windows operating system and operated by American video game development company and publisher, Valve Corporation. Steam combines online games retail, DRM technologies and internet-based distribution services with social networking and multiplayer features (in-game voice and text chat, user profiles, etc) and direct support for major games publishers, independent producers, and communities of user-contributors (modders). Steam, like the iTunes games store, Xbox Live and other digital distributors, provides consumers with direct digital downloads of new, recent and classic titles that can be accessed remotely by the user from any (internet equipped) location. Steam was first packaged with the physical distribution of Half Life 2 in 2004, and the platform's eventual popularity is tied to the success of that game franchise. Steam was not an optional component of the game's installation and many gamers protested in various online forums, while the platform was treated with suspicion by the global PC games press. It did not help that Steam was at launch everything that gamers take objection to: a persistent and initially 'buggy' piece of software that sits in the PC’s operating system and occupies limited memory resources at the cost of hardware performance.

Regular updates to the Steam software platform introduced social network features just as mainstream sites like MySpace and Facebook were emerging, and its popularity has undergone rapid subsequent growth. Steam now eclipses competitors with more than 20 million user accounts (Leahy) and Valve Corporation makes it publicly known that Steam collects large amounts of data about its users. This information is available via the public player profile in the community section of the Steam application. It includes the average number of hours the user plays per week, and can even indicate the difficulty the user has in navigating game obstacles.
Valve reports on the number of users on Steam every two hours via its web site, with a population on average between one and two million simultaneous users (Valve, Steam). We know these users’ hardware profiles because Valve Corporation makes the results of its surveillance public knowledge via the Steam Hardware Survey.

Valve’s hardware survey itself conceptualises obsolescence in two ways. First, it uses the results to define the ‘cutting edge’ of PC technologies and publishing the standards of its own high end production hardware on the companies blog. Second, the effect of the Survey is to subsequently define obsolescent hardware: for example, in the Survey results for April 2009, we can see that the slight majority of users maintain computers with two central processing units while a significant proportion (almost one third) of users still maintained much older PCs with a single CPU. Both effects of the Survey appear to be well understood by Valve:

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the Steam Hardware Survey automatically collects information about the community’s computer hardware configurations and presents an aggregate picture of the stats on our web site. The survey helps us make better engineering and gameplay decisions, because it makes sure we’re targeting machines our customers actually use, rather than measuring only against the hardware we’ve got in the office. We often get asked about the configuration of the machines we build around the office to do both game and Steam development. We also tend to turn over machines in the office pretty rapidly, at roughly every 18 months. (Valve, Team Fortress)

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Valve’s support of older hardware might counter perceptions that older PCs have no use and begins to reverse decades of opinion regarding planned and stylistic obsolescence in the PC hardware and software industries.

Equally significant to the extension of the lives of older PCs is Steam’s support for mods and its promotion of user generated content. By providing software for mod creation and distribution, Steam maximises what Postigo calls the development potential of fan-programmers. One of the ‘payoffs’ in the information/access exchange for the user with Steam is the degree to which Valve’s End-User Licence Agreement (EULA) permits individuals and communities of ‘modders’ to appropriate its proprietary game content for use in the creation of new games and games materials for redistribution via Steam. These mods extend the play of the older games, by requiring their purchase via Steam in order for the individual user to participate in the modded experience. If Steam is able to encourage this kind of appropriation and community support for older content, then the potential exists for it to support cultures of consumption and practice of use that collaboratively maintain, extend, and prolong the life and use of games.

Further, Steam incorporates the insights of "long tail" economics in a purely digital distribution model, in which the obsolescence of ‘non-hit’ game titles can be dramatically overturned. Published in November 2007, Unreal Tournament 3 (UT3) by Epic Games, was unappreciated in a market saturated with games in the first-person shooter genre. Epic republished UT3 on Steam 18 months later, making the game available to play for free for one weekend, followed by discounted access to new content. The 2000 per cent increase in players over the game’s ‘free’ trial weekend, has translated into enough sales of the game for Epic to no longer consider the release a commercial failure:

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It’s an incredible precedent to set: making a game a success almost 18 months after a poor launch. It’s something that could only have happened now, and with a system like Steam...Something that silently updates a purchase with patches and extra content automatically, so you don’t have to make the decision to seek out some exciting new feature: it’s just there anyway. Something that, if you don’t already own it, advertises that game to you at an agreeably reduced price whenever it loads. Something that enjoys a vast community who are in turn plugged into a sea of smaller relevant communities. It’s incredibly sinister. It’s also incredibly exciting... (Meer)

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Clearly concerns exist about Steam’s user privacy policy, but this also invites us to the think about the economic relationship between gamers and games companies as it is reconfigured through the private contractual relationship established by the EULA which accompanies the digital distribution model. The games industry has established contractual and licensing arrangements with its consumer base in order to support and reincorporate emerging trends in user generated cultures and other cultural formations within its official modes of production (Moore, "Commonising"). When we consider that Valve gets to tax sales of its virtual goods and can further sell the information farmed from its users to hardware manufacturers, it is reasonable to consider the relationship between the corporation and its gamers as exploitative. Gabe Newell, the Valve co-founder and managing director, conversely believes that people are willing to give up personal information if they feel it is being used to get better services (Leahy). If that sentiment is correct then consumers may be willing to further trade for services that can reduce obsolescence and begin to address the problems of e-waste from the ground up.

**Conclusion**

Clearly, there is a potential for digital distribution to be a means of not only eliminating the need to physically transport commodities but also supporting consumer practices that further reduce e-waste. For an industry where only a small proportion of the games made break even, the successful relaunch of older games content indicates Steam's capacity to ameliorate software obsolescence. Digital distribution extends the use of commercially released games by providing disintermediated access to older and user-generated content. For Valve, this occurs within a network of exchange as access to user-generated content, social networking services, and support for the organisation and coordination of communities of gamers is traded for user-information and repeat business. Evidence for whether this will actively translate to an equivalent decrease in the obsolescence of game hardware might be observed with indicators like the Steam Hardware Survey in the future.
The degree of potential offered by digital distribution is disrupted by a range of technical, commercial and legal hurdles, primary of which is the deployment of DRM, as part of a range of techniques designed to limit consumer behaviour post purchase. While intervention in the form of legislation and radical change to the insidious nature of electronics production is crucial in order to achieve long term reduction in e-waste, the user is currently considered only in terms of 'ethical' consumption and ultimately divested of responsibility through participation in corporate, state and civil recycling and e-waste management operations. The message is either 'careful what you purchase' or 'careful how you throw it away' and, like DRM, ignores the connections between product, producer and user and the consumer support for environmentally, ethically and socially positive production, distribution, disposal and recycling. This article, has adopted a different strategy, one that sees digital distribution platforms like Steam, as capable, if not currently active, in supporting community practices that should be seriously considered in conjunction with a range of approaches to the challenge of obsolescence and e-waste.

References


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