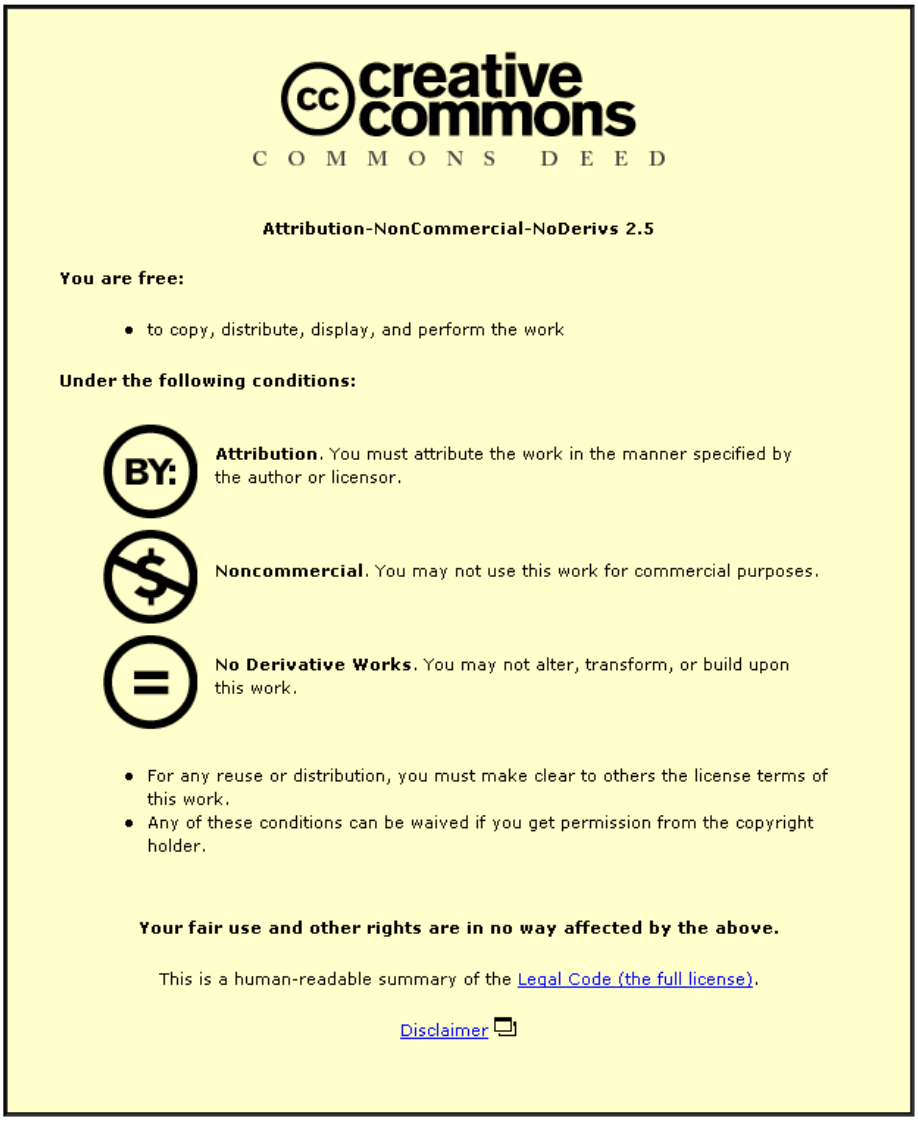

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The Barriers to the Preservation of Digital Games: Questions on Cultural Significance

Joanna Barwick, James Dearnley and Adrienne Muir
Department of Information Science, Loughborough University, UK

Digital games have become an increasingly visible and popular leisure activity in the 21st century. Despite this proliferation in our society, it seems that they are not valued as part of our culture in the same way as products such as film and music. Furthermore, digital games are a largely ignored part of our cultural heritage. Dismissed as "at best recreational, and at worst desensitizing and degenerate" (Neiburger, 2007, p. 28), they have not specifically been addressed in most of the academic literature on digital preservation and represent a serious omission in past research.

This essay discusses this gap in the research in relation to evidence of the cultural significance of digital games, the potential barriers to their acceptance as part of our cultural heritage, and how this relates to the preservation of digital games as cultural artifacts. First, the current status of digital games in our society and the size and strength of the digital games industry is considered. Second, the current interest from academia in digital games is explored. Third, the current preservation activities and the limitations of these initiatives are reviewed. Finally, the barriers to the preservation of digital games in relation to their status as a new cultural phenomenon, their relationship to traditional institutions, and perceptions of their value in terms of selection policies for preservation are examined.

Understanding the meaning of cultural significance

In order to discuss the cultural significance of digital games, it is necessary to have an understanding of what cultural significance means and this is directly related to the meaning of cultural heritage. *Heritage* relates to the concept of inheritance in terms of what history leaves behind for future generations. *Cultural heritage* is that which is "characterized by or pertaining to the preservation or exploitation of local and national features of … cultural … interest" (Heritage, 1993). This definition is too broad and lacks clarity, hence, it is more useful to consider Koboldt's (1995) definition because it separates features into tangible (art, architecture or games) and intangible assets (language and customs), with an emphasis on artifacts:

> a collection of tangible objects related to the cultural development of a society that are inherited from past generations and are valued by contemporaries not only for their aesthetic values or for their usefulness, but also as an expression of the cultural development of a society. (p. 4)

In this way, it can be seen that cultural heritage has a contemporary value and is significant to the development of society, and for this reason, it is necessary to consider the current status of digital games.

The proliferation of digital games in our society

Over 50 years have passed since the invention of the first computer game, *Tennis for Two*[1]. This game provided inspiration for the first truly successful digital game, *Pong*, versions of which provided the platform for the development of the commercial digital game industry in the 1970s. In the 50 years since *Tennis for Two*, the digital games industry has overcome setbacks, such as the crash of the industry in the early 1980s, to become a significant force in the creative industry sector. The size and strength of the digital games industry is often given as a reason for the need for research in the area of games studies and evidence of the cultural significance of digital games. Simply put, "we have a billion dollar industry with almost no basic research" (Aarseth, 2001, para. 9). Likewise, Newman (2004) cited the size of the industry as one of his three reasons for studying digital games. The scale of the industry is certainly significant as sales of digital game software in the United Kingdom amounted to £1.7 billion in 2007 (Entertainment Retailers Association, 2008) and an average of 9 games was sold every second of every day in 2007 (Entertainment Software Association, 2008). Furthermore, games are challenging other forms of entertainment. According to statistics by the Entertainment Software Association (2008), "Halo 3, the best-selling title of 2007, took in more revenue in its first day of sales than the biggest opening weekend ever for a movie, (*Spider-Man 3,*) or the first-day sales for the final *Harry Potter* book" (para. 3). This record has now been challenged by the launch of *Grand Theft Auto IV*, which "racked up first-week sales of $500 million" (New York Times, 2008, para. 1) and is expected to be the biggest game ever. Still, are the growing sales of digital games sufficient evidence to justify the *cultural* significance of digital games?

Using statistics from the European Leisure Software Publishers' Association, Poole (2000) found that the British digital game market already grossed 40% more than total box-office receipts in 2000. A Verdict report considered that the digital game market (including hardware and software) would "outstrip" the sales of both video and music during 2008 (Cellan-Jones, 2008). These types of comparisons are often made but they can be misleading. Comparisons of digital game and cinema ticket purchases do not take into account the comparative prices of cinema tickets and digital games or the additional revenue from film-associated media (e.g., DVD rentals and merchandising; Bryce & Rutter, 2003). For example, $500 million equates to around 3.6 million copies of *Grand Theft Auto IV*, which is small scale compared to the number of people who will go to see a blockbuster movie—Europe-wide cinema admissions for *Spider-Man 3* in 2007 were 27 million (European Audiovisual Observatory, 2008). However, the overall value of the industry is a useful way of understanding the spread of digital games. This is particularly true when comparing year on year growth. In 2005, software sales in the United Kingdom were 45 million units; this grew to 57.5 million in 2005, and is estimated to reach 64.4 million in 2006 (Mintel, 2006). These figures demonstrate a clear increase in the popularity of digital games and suggest that they are becoming more of a mainstream entertainment.

Digital games have been commonly perceived as a pastime for socially inept lone teenage males, a perception that Newman (2004) referred to as the "continuing myth of the videogame audience" (p.49). The reality is apparently rather different. Statistics published by the Entertainment Software Association suggest that the

average gamer is 35; 26% of gamers are over 50 and there are more adult female players than boys under 17 (Entertainment Software Association, 2008). In 2008, there has been a significant increase in software sales, particularly in the family entertainment genre (Entertainment Software Association, 2008), a trend that is attributable to the successful launch of the Nintendo Wii and new forms of brain training games. These games represent a different form of gaming interaction and are appealing to different audiences. The advertising campaigns for the Nintendo Wii, for instance, have focused on the social play aspects of the Wii and, moving away from the traditional image of gaming, they are highlighting how these games can bring friends and family together. Online gaming represents another form of social interaction. With the growth in access to broadband, this genre has become increasingly popular over the last 10 years, with companies releasing new games at the rate of 10 per month (Mintel, 2007). In January 2008, Blizzard, developers of the popular *World of Warcraft* massively multiplayer online role-playing game, announced that it had a total of over 10 million subscribers worldwide (Warcraft Film, n.d.), thus reflecting Kurriemuir's (2006) that, “online games have widely been predicted as the future of mainstream, or mass public, digital game playing” (p. 33). These games have a global reach and are shaping the future of gaming. For example, companies such as Sony and Microsoft have seen the potential in online gaming and have introduced networking facilities to their consoles to allow gamers to connect with each other via the Internet. These factors demonstrate a change in the demographics of game players and an increased status for gaming in our society but beyond this, do digital games have any deeper significance?

The contemporary significance of digital games

Alongside their increase in popularity, there is further evidence of their significance because, as Lowood (2004) acknowledged, there is a “growing scholarly interest in the study of games and related interactive media” (p. 1). The study of games has had distinctive periods of intensity and received interest from a wide range of disciplines; the latest revival of interest can be closely linked to the rise in popularity of digital games. Early games theorists, such as Caillois (1961), saw games as highly worthy of study because they reflect the culture from which they stem. He argued that games “necessarily reflect [society’s] culture patterns and provide useful indications to the preferences, weaknesses and strength of a society at a particular stage of its evolution” (Caillois 1961, p. 83). Digital games theorists also see value in games for this reason. Aarseth (2001) viewed digital games as “the most fascinating cultural material to appear in a very long time” (para. 9) and Kucklich (2006) affirmed that digital games are “cultural products with deep roots in the culture [from which] they stem” (p. 104). In other words, games can be seen as representative of specific ideologies. A reflective cultural analysis of digital games highlights that they can be used as a mirror of the values and beliefs in or contemporary society “interpreting games as symbolic objects, as cultural texts that reflect their context, is one way of understanding games as culture” (Salem & Zimmerman, 2003, p. 510). Early games were framed by a political climate dominated by capitalism, consumerism, and the Cold War and when space exploration and science fiction were very much part of the cultural environment. This was reflected in the types of games created, such as the first interactive game, *Spacewars!*, and games that were to follow, such as *Asteroids* and *Space Invaders*.

In this way, games can be seen as worthy of study: they are a reflection of society and a product of the time in which they were produced.

From another perspective, digital games can be seen as part of a transformation of society. Certainly, digital games have had an important influence on the development of computing technology, especially in the area of graphics, network sharing, and social networking, but academics are also aware of their wider cultural influence. Framing games as cultural texts, academics from the fields of literature and film studies are interested in how games can be read as a new form of interactive fiction and are focusing on how games relate to new forms of "trans-media storytelling." Murray (1997) presented an interesting examination of how digital media is changing storytelling. Specifically, she saw digital games as the starting point of a change in literary tradition towards "cyberdrama," in which participation and interaction are all important:

> While linear formats like novels, plays, and stories are becoming multiform and participatory, the new electronic environments have been developing narrative formats of their own. The largest commercial success and greatest creative effort in digital narrative have so far been in the area of computer games. (Murray 1997, p. 51)

These theories and developments highlight an increasing overlap between different types of media. In television, the increase in popularity of gaming is seen as a threat and companies such as the British Broadcasting Corporation are exploring the use of interactivity to promote their programs. Many recent dramas, such as *Doctor Who*, have been accompanied by a series of online games in a hope of appealing to a wider audience. This crossover between games and drama is also evident in Hollywood. Blockbusters are commonly accompanied by the release of a digital game and game characters are crossing over to the big screen (e.g., *Lara Croft* from *Tomb Raider*). This influence on wider culture is also evidenced by cartoon spin-offs such as *Sonic The Hedgehog* and extensive ranges of merchandise. The phenomenon of *World of Warcraft* has grown beyond the online game itself, most notably in the planned adaptation of the game's world and history into a movie (Warcraft Film, n.d.) and its starring role in an episode of *Southpark* (Viacom, 2007). Thus, the success of *World of Warcraft* has in its own right led to spin-offs in other media, this being contrary to the more usual process of some popular games being spin-offs from other media (e.g., *Lord of the Rings* and *The Witcher*). These developments demonstrate how it is becoming increasingly difficult to isolate different media into distinctive genres. Furthermore, the interactive nature of games can be seen as a catalyst for changes in the way we perceive and interact with technology: digital games have become a lead technology.

Recognition of digital games as a lead technology and the potential of their appeal are also evident in other sectors. In the heritage sector, digital games are being used as a way for museums to increase their relevance to a new generation of museum visitors by creating interactive gaming worlds set within virtual museum environments[2]. Using gaming platforms, these institutions have created games based on their collections. In the arts sector, games are receiving some recognition as an art form in their own right. For instance, the touring exhibition *Game On*, which has been one of the most significant digital game exhibitions, was hosted in London

by the Barbican Art Gallery (British Broadcasting Corporation, 2001). Another trend in the art world is the increasing number of media artists who are using gaming platforms as a tool for creating new forms of interactive art (Creative Games, 2008). The diversity of interest in digital games may underline their significance but it also highlights their complexity. This is reflected in the different preservation contexts.

Current preservation activities

One of the most significant forms of preservation is being undertaken by games enthusiasts. “Abandonwarez” are digital games made freely available online because they are no longer commercially available. Prompted by the nostalgia for old games, the hosts of these game sites argue that their activities do not harm the industry; McClellan, who runs the *Bunny Abandonware* site, stated:

> We take the game down if the IDSA [Interactive Digital Software Association] asks but its pretty silly because abandonware means games that are no longer sold and supported by their makers. There is no alternative to downloading them. You can’t buy them anywhere. (King, 2002, para. 12)

Although the industry does not actively monitor these activities at present, as the trend for releasing retro-games continues, this passivity may change. Certainly, it is clear that the industry does not view the protection of its Intellectual Property rights as “silly” because there is potential revenue in the re-release of older titles. As Ric Hirsch, the IDSA’s vice president of intellectual property enforcement pointed out, “As old as these game titles are, they are considered to be important assets and (the companies) hold exclusive rights” (King, 2002, para. 16).

Abandonware activities are undertaken by individual enthusiasts without permission from the rights holders and cannot be considered as a stable preservation process. First, these activities are not part of an established, organized program of preservation but are ad-hoc Web sites that could disappear at any time. Second, there is the question of the legality of these activities. As Kline, Dyer-Witheford, and De Peuter (2003) acknowledged, “The strength of corporations depends on … their ability to legally protect innovations from competitors and consumers by means of patents, copyrights, and trademarks” (p. 67). Evidence from the music industry has shown that companies are becoming more proactive against the illegal free distribution of their material—the threats of piracy are taken very seriously by the games industry. For these reasons, abandonwarez demonstrate a desire to preserve game history from games enthusiasts, but do not represent a long-term reliable system for the preservation of this material. So, what are the alternatives?

Some museums are already involved in the preservation of digital games. The Strong National Museum of Play in Rochester, New York, whose mission is “to collect and preserve items that illuminate the history of play” (see http://www.strongmuseum.org), has started to include digital game artifacts in its collection. The Computer History Museum in California, with its mission “to preserve and present for posterity the artifacts and stories of the information age” (Computer History Museum, 2008, para. 1), includes material related to digital game history and the American Museum of Moving Image has expanded its remit to incorporate digital media, which includes digital games. The diversity of these

museums reflects the different disciplinary interest in digital games: they can be framed as part of the history of play, part of the important technological development of computing, and part of a continuing development of visual media. Certainly, the inclusion of digital games within these collections highlight their significance, but the different contexts raise the question of how they fit in with the policies of traditional institutions.

Although the preservation of digital games has not been appropriately addressed in the scholarly publications, there is evidence that preserving these cultural artifacts is beginning to receive some attention from academia. The growth in academic interest in digital games has lead to some research institutions beginning to develop their own game collections. The Stephen M. Cabrinety collection at Stanford University is one of the most notable examples as the first archival and library collection of digital games in the United States (see http://www.digitalgamearchive.org/home.php). The collection includes over 400 pieces of computer hardware, a wide range of software for 27 different operating systems, as well as a large number of related documents, manuals, and other ephemera. Curated by Henry Lowood, the collection has been developed to support the teaching and research needs of the University. Other American institutions have also started digital game collections; for example, the Centre for American History at the University of Texas and the University of Illinois. These collections are seen as valuable research support tools.

Outside of the United States, other institutions have also seen the significance of preserving these artifacts. In Japan, Hosoi Koichi at Ritsumeikan University has undertaken a comprehensive approach to the preservation of digital games. He started an ambitious project to create an archive of “the entire gaming experience” (Ritsumeikan University, 2006). This project will involve collecting computer hardware and software, developing emulators, and making visual recordings of gaming experiences. This archive is also intended to support the work of future generations of researchers. These collections represent significant moves towards a wider acceptance of the importance of preserving digital games heritage.

In United States, digital game preservation has been considered by national heritage institutions. In August 2007, as part of the Library of Congress’s digital preservation program, Preserving Creative America, the Preserving Virtual Worlds project was announced. This project, which is collaboration between the University of Stanford, the University of Maryland, the University of Illinois, the Rochester Institute of Technology, and the Linden Lab company, has been funded to investigate possible solutions to the technical issues of digital preservation and computer games. “Major activities will include developing basic standards for metadata and content representation and conducting a series of archiving case studies for early video games” (Library of Congress, 2007, para. 6). This project marks the beginnings of a change in perception towards digital games in United States, as Chaplin (2007) suggested, “[the] notion that video games were something with a history worth preserving and a culture worth studying has gone from absurd to worthy of consideration by the Library of Congress” (para. 2). These case studies will provide valuable information about the technical processes for the preservation of digital games and the involvement of the Library of Congress will help to promote the cultural significance of these digital objects.

The barriers to preservation

However, although all of these initiatives are important in relation to raising awareness of the cultural significance of digital games, they are still very limited. In order to preserve any material, certain specialized methods are required. With digital objects, the methods needed are different because this material is "machine-dependant." Technical issues present major challenges for the institutions and organizations that have the responsibility of preserving digital heritage. The approach of research institutions and museums has been to collect artifacts—a technological preservation approach to the problem. In this way, the integrity of the material—and in relation to digital games as well as the integrity of the experience—is maintained. However, this is not seen as a viable long-term solution (Technical Advisory Service for Images, 2007). From an organizational perspective, physical collections require time, space, and money to maintain and have limited accessibility; from a technical perspective, the original hardware or software may fail and it could be impossible to replace. Emulation, which is seen as the heart of software preservation, is the approach most often taken by games enthusiasts (see http://www.digitalgamearchive.org/home.php). Nevertheless, these activities are unstable forms of preservation because they are individual initiatives without long-term support. The Preserving Virtual Worlds project is an important step forward. However, at present, it is still only a project—a longer-term commitment is necessary to ensure the continued security of digital game heritage. There is a wide awareness of the importance of the preservation of digital heritage and there is a consensus that its issues need to be addressed in order to ensure the long-term survival of potentially significant elements of cultural heritage. "Culture is at constant risk [and] … the digital domain … may exacerbate this risk" (Deegan & Tanner, 2006, p. 4). In fact, the preservation of digital materials "has become increasingly pressing" (Abid, 2007, p. 7) and the loss of digital heritage has engendered "a sense of imminent crisis" (Lavoie & Dempsey, 2004, p. 9). Despite the volume of literature on digital preservation, digital games have been largely overlooked. What are the reasons for this?

Games are an everyday part of life and their proliferation could be an obstacle to their preservation. According to Lowenthal (1998), "We value our heritage most when it seems at risk; threats of loss spur owners to stewardship" (p. 24). Do games seem '"at risk"? Certainly, games enthusiasts who maintain abandonware sites believe that there is a real threat of loss, however, in the context of cultural heritage, games are a comparatively new phenomenon and their 50-year history does not seem very long in comparison with other cultural artifacts. Nevertheless, the speed of development in computing has been phenomenal and thus, digital material is at much greater risk of becoming obsolescent:

> With traditional collections, lack of selection for preservation may not necessarily mean that the item will be lost, allowing for a comfort zone … No such comfort zone exists in the digital environment where non-selection … will almost certainly mean loss of the item, even it is subsequently considered worthwhile. (Jones & Beagrie, 2001, p. 42)

This lack of a "comfort zone" and the perpetual innovation within the digital games industry could lead to the loss of significant parts of digital game history. It is

therefore important that national preservation organizations and institutions, such as museums and libraries, take responsibility to safeguard against these losses.

Museums and libraries have traditionally been responsible for the preservation and protection of cultural heritage. However, as Jones and Beagrie (2001) observed, “the question of who should be responsible for ensuring long-term preservation is by no means as established in the digital environment as it is in the analog environment” (p. 34). The main problem is that “born-digital” materials, such as games, do not fit comfortably into the traditional collection strategies of these institutions. The diversity of approaches to the issue of the preservation of digital games highlights its complexity and for traditional institutions with established collection policies, new digital forms are presenting complications and new policies will only be put in place if these new forms are considered to be of value to cultural heritage. This task is not simple because “All this salvaging however requires money, time, and effort; against the benefits of preservation must be set its costs” (Lowenthal, 1998, p. 399). The funding implications and costs of preservation activities mean that active decisions have to be made about what should be preserved. As digital games have been shown to be relevant within a number of contexts, it becomes less clear who should be taking responsibility for their preservation. However, this should not mean that they are overlooked; it is merely further evidence that more research is needed in this area.

The commitment necessary to ensure the longevity of preserved material is restrictive—not everything can be preserved, and therefore, it relies upon strategic selection and retention policies. Making predictions about what will be significant in the future is a difficult task, especially as “what warrants preservation expands with what is thought historically significant” (Lowenthal, 1985, p. 387). Within institutions, decisions are made based on established selection policies and, as Owen (2007) suggested, “the culture, standards and values of traditional heritage institutes are not suited for preserving the ‘digital fabric of society’” (p. 47). The nature of digital materials is problematic for these institutions as digital culture is closely linked to popular culture and these objects are seen as disposable, entertainment products that do not fit into the institution’s traditional “high” culture, information-based strategies: they are, after all, merely games. Owen (2007) accused the heritage institutions of being “too inward-looking,” arguing that they are “defining the digital world in terms of the institution instead of defining the institution in terms of the digital world” (p. 48). In his view, the result of these attitudes will be detrimental to future generations, for they “will see the 21st century through the 20th century eyes of the heritage institutions that have failed to make the transition to an entirely new definition of heritage materials required by the digitization of society” (Owen, 2007, p. 48). Certainly, selection policies are based on the opinions of those involved in the process of preservation and their decisions will be directly influenced by how they perceive culture, the role of cultural heritage, and the value with which specific elements are attached.

New policies will only be put in place if these new forms are considered to be of value to cultural heritage and in relation to digital games, it is easy to see how measures of value have been a barrier to preservation. During (2005) suggested that value can be broken down into three aspects: value, quality, and taste. Each of these can be seen as related to different groups. Value is defined as “the abstract worth of

a cultural object … in relation to other objects" (During, 2005, p. 203). This "worth" is difficult to measure, as culture has no economic value, except in relation to the heritage industry. The heritage industry plays an important role in how culture is preserved especially because "cultural memories have become increasingly bureaucratized and commercialized" (During, 2005, p. 57; Lowenthal, 1998). Institutions responsible for the preservation of cultural heritage either have to rely on either government support and justify their policies or on public interest and enthusiasm, in relation to the purchase of heritage or visitor fees. Value is therefore directly influenced by these factors.

In order to make appropriate decisions of value, criteria need to be in place to capture quality material. According to During (2005), quality can be described as "the worth of a cultural object as judged from within the institutions from which it is produced" (p. 203). It is associated with winners of prizes such as the Turner Prize or films with Oscar-nominations—recognition from the organizations from which the objects originate. In relation to digital games, this is not straightforward. Popular culture has a difficult relationship with quality because of its disposable nature: game companies are keen for consumers to move on to the next release and abandon the old; hence, quality is viewed as transient. This industry attitude influences the perceived value of games and in order for decisions of quality to be made, it is important that discussions are held between institutions and potential users of collections. Taste is "an individual's personal and cultural preferences" (During, 2005, p. 204). The growth of retro-gaming and digital game nostalgia is an example of how individuals' own interests can lead to personal decisions about the need for preservation. As Cortada suggested, recognition of the significance of material often comes from outside the institutions and it is important that they monitor changes in opinions of value, engage with the needs of their users, and anticipate the future needs of researchers (Lowood, 2004).

What does all this mean?

Digital media is changing many aspects of our lives and digital games, with their position as a lead technology and the influence they have had on computing technology and other media. Yet, as part of our every-day lives, they have been overlooked as a valuable aspect of our cultural heritage and their preservation has received little attention in the literature on digital preservation. Despite this, their continued growth in popularity and an ever-increasing interest from academia suggest that they should be recognized as "something with a history worth preserving and a culture worth studying" (Chaplin, 2007, para. 2).

In conclusion, the digital games industry is as a significant competitor within the cultural industry sector and the changing demographics of gamers show the development of digital games into a mainstream entertainment. These factors are leading to a change in perception towards digital games. The growth of academic interest, the development of research collections, and the recent involvement of the Library of Congress in the Preserving Virtual Worlds project demonstrate that games are beginning to be taken more seriously. However, there is still a significant gap between this interest in digital games as a cultural phenomenon and the acceptance of them as a part of our digital heritage that needs to be protected and preserved. The main barrier to the preservation of these important cultural artifacts can be

attributed to a lack of research. However, if appropriate and timely decisions to be made, it is vital that these issues are debated more widely and at different levels; that is, between gamers, the industry, researchers, and the institutions responsible for the preservation of our cultural heritage. These debates need to take place now before the history of the development of this important cultural phenomenon is lost forever.

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[1] *Tennis for Two* was played by two players on an analog-system oscilloscope and is therefore not a digital game in the true sense. Its historical significance relates to the development of a graphic display for playing games.

[2] Good examples of this have come from both the Louvre in Paris and the Hermitage Museum in St. Petersburg.