An Appraisal of the Digital Art Museum

In 1997 and 1998, the first two book-length treatments on digital museology, *The Wired Museum* and *The Virtual and the Real* were published. While some museums such as the Metropolitan Museum of Art, the Detroit Institute of Arts and the Museum of Modern Art, New York had developed web museum presences before the publication of these two books[1], it was only after that many museums began to grasp just how extensive digital technology could develop within a museum context. While many museums had already begun digitizing their collections and creating searchable databases for their collections, web presences were slower to evolve, as their goals and format were considered diametrically opposed to the purpose of the physical museum.[2]

Yet today, a digital presence is not only expected but demanded. Almost every museum of any size has some kind of website, and many of the fears that museum professionals expressed at the beginning of the digital museum – that visitors would refuse to attend and that the original object would no longer be valued – have not come to pass. Instead, the opposite phenomenon seems to have occurred: the digital object has become more complicated and museum visitorship has increased. Because of the ubiquity of the digital museum presence and the potential opportunities that digital museums provide, it is time to assess the digital museum.

This paper seeks to frame the digital museum in the context of the physical museum. The way museums are understood by themselves and the public highlight some of the differences between digital and physical museum types. The digital framework also forces a new conception of what museums consider important, with certain departments becoming increasingly visible. Digital museums, however, rely on the authority of their physical

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[1] A brief look in the Wayback Machine service, instituted in 1996, shows that MoMA's site was initially collected on November 11, 1996, the Detroit Institute of Arts' site collected on December 24, 1996 and the Metropolitan Museum of Art's site on November 11, 1996. By contrast, the Louvre's site was not collected until December 5, 1998, the Minneapolis Institute of Art did not have its site collected until December 11, 1997, and the Philadelphia Museum of Art's site was not archived until December 1, 1998.

[2] Initial digitization efforts for museum collections (as well as archives and libraries) began in the early to mid-1990's, with significant overlap as to purpose and method; see Puglia, Steven and Rhodes, Erin, "Digital Imaging – Haw Far Have We Come and What Still Needs to Be Done?" In *RLG DigiNews*, April 15, 2007, Vol. 11, No. 1

brethren and continue to focus on objects. Lastly, a special case – the Adobe Museum of Digital Media – will be examined in terms of its credibility and what it intends to be.

The Perception of the Museum

The museum as an institution traces its most distant incarnations to the time of the Ptolemaic pharaohs[3]. Its closer kin, however, is embedded in the 16th and 17th century *Wunderkammern*, or "wonder cabinets", better known in English as cabinets of curiosity. From the very beginning museums were rooted in physical objects, either as a way to master the physical world or to demonstrate wealth, power of expertise in a particular area. *Wunderkammern* also acted as a way to illustrate and explain the greatness of God's creation, a crossroads between Foucault's Renaissance and Classical *epistemes*.[4]

Perception of the museum has been a deeply entrenched aspect of museum culture. The placement of objects in certain contexts and with other objects has influenced their interpretation since the *Wunderkammern*, and the presence of objects in specific buildings with a certain "museum" look and feel prescribe a certain type of behavior.[5] It is not only external perception, but also internal perception that alters the understanding of what a museum is and can do. The definition of a museum, according to the International Council of Museums (ICOM) states:

> "A museum is a non-profit making, permanent institution in the service of society and of its development, and open to the public, which acquires, conserves, researches, communicates and exhibits, for purposes of study,

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[3] Abt, Jeffrey. "Museum". In *The Dictionary of Art*, Macmillan, 1996, pg. 354

[4] The Renaissance episteme was entirely relationship driven, often in terms of visual similarities from one object to another. Earth and sky and moon and sun were diametrically opposed but interrelated because they shared a number of visual characteristics and some base functionality. The classical episteme continued with the idea of visual resemblances, but also tried to classify objects through taxonomic order and, in the *Wunderkammern,* through juxtaposition of objects. See Eilean Hooper-Greenhill, "What is a Museum?" in *Museums and the Shaping of Knowledge*, 1992, Routledge, pg. 12-16.

[5] Mason, Rhiannon. "Museums Galleries and Heritage: Sites of Meaning-Making and Communication". In *Museums, Galleries and Heritage*, Gerard Corsane, ed., Routledge, 2005, pg. 204

education and enjoyment, material evidence of people and their environment."[6]

Museums do indeed perceive themselves in these overarching terms, and clearly ICOM's definition tries to encompass as many museum-like spaces as possible. The ICOM definition skips over the complicated issue of specific types of collections; zoo and botanical collections have very different conservation procedures than art museums, but both certainly are dedicated to conservation. In stating "material evidence" and leaving out the term "culture", non-collections based spaces such as science centers can fall under the rubric of museums as well. Art and history museums actually have the least impact in this statement, with nothing referring to aesthetics, culture or heritage. It is this broad sweep to define all museums in one statement that (in part) instills a sense of self-imposed loftiness in the way museums in general conceptualize themselves.

Visitor perception

Yet visitors may well see museums quite differently. "The word 'museum' is commonly understood to denote a collection of entities held to have sundry intrinsic worth but whose value is greatly enhanced by the act of gathering and preserving the discrete items as a totality in one place" [7] as Hilde Hein explains. In this statement, Hein uses very specific terminology to describe the visitor experience. She suggests that the idea of museums as viewed by most individuals is that of a collection in one place, without reference to most of the categories listed in the ICOM definition. While she qualifies her words by stating that objects rarely go unattended without some kind of interpretive label, she hastens to add that labels often are not read or appreciated by a visiting public[8]. John Falk also notes that the measure of a museum's success, inasmuch visitors gain knowledge from the exhibitions, is not always an immediate experience[9].

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[6] International Council of Museums, ca. 2005, quoted in Hein, George E. "Museum Education". In *A Companion to Museum Studies*, Sharon MacDonald, ed., Wiley-Blackwell, 2006

[7] Hein, Hilde. *The Museum in Transition: A Philosophical Perspective*. 2000, Smithsonian, pg. 3

[8] See also R.W. Carlisle on attention in science museums, "What do School Children Do in a Science Museum?", *Curator*, vol. 28, No. 1, 1985, no pg. number. George Hein notes that time spent with an object is the only measurable factor in most museums. Hein, George, pg. 348

[9] John Falk, Lynn D. Dierking and Marianna Adams, "Museums and Free Choice Learning". In *A Companion to Museum Studies*, Sharon MacDonald, ed., Wiley-Blackwell, 2006, pg. 326-8.

The Authority of the Museum

Museums are popular. Between 1988 and 1998, museum attendance grew by nearly 200 million visitors – from 678 million to 865 million[10]. Museum attendance tops that of sporting events[11], and American Association of Museums (AAM) director Ford Bell has claimed that there are more museums in America than Starbucks locations[12]. In addition, museums are viewed as creditable and reputable in terms of the facts they provide. According to the AAM, up to 87% of Americans think of museums as among the most trustworthy sources of information available[13].

Underlying these facts and perceptions is the authority of the museum. The idea of authority –the representation of a reliable, genuine view of the past, of heritage and of culture and the auspices in which this view is presented - is not obvious, and neither is its origins. As Crew and Sims observe, "Objects have no authority; people do… Authenticity – authority – enforces the social contract between the audience and the museum, a socially agreed-upon reality that exists only as long as confidence in the exhibition holds."[14] Here the authors make two points about the authority of the museum: that it is based on authenticity and that the exhibition is the main tool for conveying this authority.

Harold Skramstad, president emeritus of Henry Ford Museum and Greenfield Village, agrees with Crew and Sims as far as exhibitions are concerned. For him as well as Crew and Sims, the exhibition is the primary tool for interacting with visitors. "Trustworthiness and authority in a museum grow directly out of skill and expertise well exercised as well as out of continual connection to the audiences served… the authority that a museum claims will be built not primarily through its collections nor its specialized expertise, but through those resources engaged in conversation and dialogue with those audiences the museum serves."[15]

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[10] Pitman, Bonnie. "Muses, Museums and Memories". In *Daedalus*, Summer 1999, Vol. 128, No. 3, pg. 12

[11] Ibid.

[12] Erin Geismar, "6 Ways to Save at a Museum". SmartMoney.com, July 9, 2008, http://www.smartmoney.com/spending/deals/6-ways-to-save-at-a-museum-23430/. Accessed 12/11/10

[13] American Association of Museums, "Museums Working in the Public Interest". http://www.aam-us.org/getinvolved/advocate/upload/AAM_Museums_Working_in_the_Public_Interest.pdf, accessed 12/11/10

[14] Spencer R. Crew and James E. Sims, "Locating Authenticity: Fragments of a Dialogue". In *Exhibiting Cultures: The Poetics and Politics of Museum Display*. Ivan Karp and Steven D. Lavine, eds., 1991, Smithsonian Books, pg. 163

[15] Harold Skramstad, "An Agenda for American Museums in the Twenty-First Century". In *Daedalus*, Summer 1999, Vol. 128, No. 3

The entertainment value of the museum has been tied into the museum model, at least in America, since its earliest days[16], but it is only in the last twenty years that entertainment has been taken as seriously as other factors in the museum experience. Skramstad argues that the future museum will balance educational value with exciting personal interaction, a concept now known as edutainment.

Another crucial component of authority is the reliability of the content. While experiences are certainly authentic and enjoyed by an audience, the information provided must come from reliable sources. Steven Conn's commentary on science museums is apt here: museums are often the first place in which social, political and cultural content is encountered in a way that does not force the viewer to take a side[17]. Through the authority and reliability of the museum, museums also place a legitimacy on the objects, cultures and subjects illustrated within.

Museum authenticity, however, remains more difficult to interpret. The term "authenticity" inspires ideas of genuineness and reality, yet the notion of what is "authentic" is increasingly blurred. If the Detroit Institute of Arts' most recent exhibit, "Fakes, Forgeries and Mysteries" is any indication, an object can be genuine and inauthentic. Even though the objects in the exhibition are inauthentic, the objects themselves certainly exist as real, tangible things, and the display of these objects is not dissimilar to that of a traditional museum exhibition. In the museum's interpretation of these objects, the authenticity transfers from the object to the experience of the objects. The aura of the object is lost, but the aura of the museum remains.

The exhibition and the aura

The aura can also be invented. For some fraudulent works such as the "Shakespeare" play *Vortigern* written by William-Henry Ireland or some of the "Vermeers" painted by Jan Van Meegeren, they are not only genuine but also original, singular works. This problematizes Walter Benjamin's concept of the aura – that a work of art should be original, that process is superior to product especially for reproducible objects like photographs and that restricted

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[16] "In 1786, (Charles Wilson) Peale saw his museum as a commercial as well as an educational undertaking; he understood the need to connect his content to his audience's interests in a lively manner if he expected them to pay the admission fees that his museum required for its operation." Ibid. Also consider the work exhibit designer and former Disney Imagineer Bob Rogers performed for the Abraham Lincoln Presidential Museum as a case study for edutainment.

[17] Conn, Steven. "Science Museums and the Culture Wars". In *A Companion to Museum Studies*, Sharon MacDonald, ed., Wiley-Blackwell, 2006, pg. 507.

access to the object enhances its aura[18]. Even though these objects listed above were revealed as fakes, they are famous in their own right as well, and have gained their own reputations independent of the objects they were meant to simulate.

With the concept of the invented aura and the authenticity of the object in question, the exhibition becomes the primary vehicle for displaying museum authority. Crew and Sims use a historic house display as an example of the authentic event, a display using objects to create a visual image of a particular place and time. The "period room" in some museums can be said to do the same, with objects or features whose provenance clearly traces them to different time periods and whose accuracy is called into question.[19] Crew and Sims explain that the exhibit – the assemblage of objects regardless of period to create a single event – builds a narrative that visitors can interact with and develop an understanding of a particular place and time. The narrative is object-intensive, but that critical mass of objects forces a perception in the imagination of visitors: a powerful use of museum authority to generate a particular impression whose accuracy is unquestioned and whose value is created by the presence of the exhibit within the museum walls.[20]

Digital Objecthood

"Absolute unreality is offered as real presence." – Umberto Eco[21]

Hilde Hein ultimately opens the door to viewing digital objects in the same terms as material ones, placing them as equal to one another and using the same tools to interpret them. By using the word "entities" as opposed to objects, she begs the possibility of nonmaterial objects and experiences as not only valid museum objects but also the validity of the digital museum as a component of the physical museum. Unlike Sandra Dudley, who claims materiality as

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[18] Benjamin, Walter. "The Work of Art in the Age of Mechanical Reproduction". 1936, http://www.marxists.org/reference/subject/philosophy/works/ge/benjamin.htm, accessed 12/19/10

[19] An example of a period room with some anachronistic features is the "Room from Het Scheeptje (The Little Ship)", on display at the Philadelphia Museum of Art. The windows come from a building dated to a century later and the floors are a modern reproduction. http://www.philamuseum.org/collections/permanent/42084.html, accessed 12/19/10. A closer analysis of the "problem" of period rooms can be found in Pilgrim, Dianne, "Inherited from the Past: The American Period Room", *American Art Journal*, Vol. 10, No. 1 (May 1978)pg. 4-23

[20] Crew and Sims, pg. 162

[21] Quoted in Hein, pg. 80

an essential component of objecthood[22], Hein proposes that objects do not need to be material, only perceivable by "an actual or potential consciousness"[23]. According to Hein, objects are formed through attention – the objects that survive through time are those which people have focused on at some point and deemed important enough to collect and maintain[24]. In addition, placement of an object in a museum can lead to a different or renewed status or categorization of the object[25].

Physical objects and digital objects share a number of commonalities. The physical object has certain irrefutable properties: it is touchable, it has weight and mass, it is three dimensional. The digital object lacks dimensionality but, like a print or other flat media, can replicate the illusion of space and weight. Both act as carriers of information, subject to interpretation and influenced by placement in context with its surroundings. Both are mute without accompanying data – usually text describing the object.

Objects require a certain level of maintenance as part of best practice. ICOM and the American Association of Museums (AAM) both place conservation among the top priorities of museums. Yet conservation is anything but cost effective: physical objects are subject to decay, and depending on the materials the damage can be extensive and irreversible. Digital objects too face preservation issues such as format obsolescence, data rot and the decay of the physical carrier for the digital media. Neither type of object is impervious, but their weaknesses are known and can be mitigated with proper care. Digital objects, however, offer significant preservation benefits to their physical counterparts.

Digital preservation

Digital objects, or more accurately digital representations of physical objects, are not technologically sophisticated enough at this time to act as true doppelgangers. For most practical purposes, a digital copy is acceptable, functioning in a digital environment in the

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[22] Dudley, Sandra. "Materiality Matters: Experiencing the Displayed Object" Presented at University of Michigan, Ann Arbor, MI, October 12, 2010

[23] Hein, Hilde, pg. 51-2.

[24] Ibid.

[25] In addition to Hein, see Conn, Steven, *Do Museums Still Need Objects?,* University of Pennsylvania Press, 2010, pg. 34-5, for a discussion of how objects once considered anthropological artifacts and stored in natural history museums are being reinterpreted as art objects, and how this affects their perception.

same fashion as a physical object[26]. In situations where flawless, matching color and exacting detail are not necessary – browsing, searching a collection for a specific image, printing out an object for a report, downloading an image for personal use – the original object is distinguished from the digital one by the quality of the digital image and serves no preservation or scholarly purpose. However, for archival or preservation, exacting standards must be met. A digital copy needs to be a near simulacrum of its original, replicating it in virtually every imaginable dimension[27].

Standards for digital media stem from previous preservation efforts with regards to microfilm preservation[28]. The use of digital technology to create preservation worthy images came about because users demanded qualities that microfilm cannot replicate, such as color. While equally dependent on equipment on which to view the objects, the standards for determining quality in the digital world are still in development[29]. Until some consensus can be reached with regard to preservation-quality images of physical objects can be reached, it is premature to consider digital imagery the final solution to preservation of physical objects.

For a museum, in which preservation/conservation is a primary concern, these issues cannot be ignored, and the purpose of the museum's web presence should be evaluated in terms of end use. If the museum is intent on creating digital images for preservation purposes (whether or not access to them will be grated to a general public) then questions of digitizing equipment, facility considerations and viewing conditions come into play[30]. If access to the images is the primary concern, however, then preservation considerations are modified from

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[26] The Library of Congress proposes digitization for the purposes of "visual surrogates", envisioning a method which will prove eventually to be "use neutral". Puglia, Steven, and Rhodes, Erin

[27] "All information available in the original must also be visible in the preservation copy, as well as in the derivative images made from this copy." National Library of the Netherlands, *Metamorfoze Preservation Imaging Guidelines DRAFT.* June 2007, http://www.metamorfoze.nl/publicaties/Richtlijnen/guidelinespijune07.pdf, accessed 12/19/10.

[28] Ibid.

[29] The question of "significant properties" comes into play. Significant properties are "essential characteristics for a digital object which must be preserved over time for the digital object to remain accessible and meaningful." To date, benchmarks for these properties have not been agreed upon to a wide extent, and foundational concepts such as format (JPEG 2000 v. TIFF) have not been resolved. Rankin, Steven, "Digital Object Semantics". *What to Preserve? Significant Properties of Digital Objects* conference, Digital Preservation Coalition, April 7, 2008, British Library Conference Centre.

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image replication to a recreation of the museum exhibit – the authentic event rendered in digital form.

Access

As mentioned above, criteria for making preservation-quality images are still a matter of debate. However, digital images intended for access have not been quite as contentious, and generally follow the creation of digital preservation images. Access images tend to be lower-quality (and hence appropriate for quick downloading)

Digital objects can be used in situations where a physical object cannot, and this is important to consider when placing the physical museum against its digital cousin. Physical objects can only be seen in one place at one time. While intangible, varying in scale if not dimension, digital objects have an enviable flexibility in that any number of individuals can potentially view them at any given time and as many times as the viewer wishes. It can be placed in the museum website acting in the same white-box manner in its pristine isolation. Else, it can be placed amid other objects, interpreted with rollover text and allowed to interact with viewers via clicking and dragging or other such interaction.

Digital Museums and Intangible Heritage

UNESCO defines three different types of heritage, which will be used to define different types of objects and experiences throughout this paper:

> *Tangible heritage*: A monument, group of buildings or site of historical, aesthetic, archaeological, scientific, ethnological or anthropological value[31]. This category refers primarily to material culture – objects, architecture, artifacts
> *Natural heritage*: Outstanding physical, biological and geological features; habitats of threatened plant or animal species and areas of value on scientific or aesthetic conservation[32] While natural heritage will not be covered with real detail here, it is important to note that, although the American Association of Museums includes zoos,

[31] Kirschenblatt-Gimblett, Barbara. "Intangible Heritage as Metacultural Production". *Museum International*, No. 221-222 (Vol. 56, No. 1-2, 2004), pg. 52
[32] Ibid., pg. 53

aquaria and arboretums in its definition of museums, this is not a universal perspective.

Intangible heritage: All forms of traditional and popular or folk culture, i.e. collective works originating in a given community and based on tradition.[33] In this paper, intangible heritage will refer to performative arts such as music and dance and their expression through tangible heritage.

The physical museum, with its sharper focus on physical objects denies certain opportunities to work with the collection in their intangible heritage guise. It has long been conceded that museums remove objects from their original contexts, placing them in new environments where meaning changes considerably[34]. For objects intended to be viewed in isolated or exalted contexts such as some artworks and devotional religious pieces, the museum context is not as alienating or as distant from the original framework for the objects. For performative materials such as puppets, costumes and masks, however, this disconnect can be jarring and can lead to misinterpretation of the object. Because the object cannot be interpreted in motion, the visitor cannot gain the perspective needed to understand the object as it was understood by its original culture or in something akin to its original context.

Digital museums and museum websites can offer a broader interpretation of the physical object. Whereas collection of physical objects relating to performance is limited in many cases to the objects themselves, websites can offer video of performance in action and interviews with performers and artists. Even with tangible objects such as pottery, paintings and the like, the process of manufacture and the connection between object and culture can be made more explicit by demonstration, particularly when the video is captured at the place and time of origin of the object. This differs from in-house museum demonstrations by placing the object not only in context with a culture but also with a space and time, allowing the visitor the opportunity to witness as closely as possible the object in totality. In addition, where fragile, original performative objects cannot be used, video can be replayed as often as necessary. While video is not a perfect solution (and is itself a representation of a single

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[33] Ibid., pg. 54

[34] "Objects have been reconstituted as sites of experience and museums increasingly hold themselves accountable for delivering experiences." Hilde Hein, The Museum in Transition: A Philosophical Perspective. 2000, pg. 5. As objects are increasingly viewed as "dumb" and "transformed in the meanings that they may be said to carry" by the museumification of the object, the museum experience becomes primarily not one of objects but of responses and interpretation. See Spencer R. Crew and James E. Sims, "Locating Authenticity: Fragments of a Dialogue", pg. 159.

instance of an event, although websites offer the chance to supply multiple examples of a single phenomenon), it does allow for a cost effective solution with broad interpretive possibilities and wide availability.

A Closer Look at Museum Sites

The digital museum copies the strategies of the physical museum. A digital exhibition speaks in the same authoritative voice and uses color, juxtaposition and branding to invoke a physical exhibition in a particular museum. The theory behind the digital museum is that it is also more flexible than a physical museum – it can be accessed anywhere, anytime, by anyone. There are problems with this approach, as covered later, but the replication of the museum online is now commonplace and should be examined further.

A digital museum in most cases is a digital rendering of a physical museum. The importance of a digital presence online is multifaceted and, by this point, *prima facie* necessary. Yet the tangibility of most museum collections and the sheer physicality of museums themselves do not necessarily make a digital museum obvious. The digital museum, however, acts as a "Good citizen" in the online community. "In the 21st century, museums need the world exposure of the Internet to promote their collections and expertise, and to bring virtual visitors to their physical doors. The Internet, having no knowledge of its own, needs museums' expertise to satisfy visitors' expectations for validated, well organized content."[35] Here, a reflexive relationship between museums and the Internet exists. The museum's permanence, authorized and vetted, trusted, filtered knowledge dovetails with the randomness of the Internet, with its lack of authoritative editorship and replicable objects. In its digital form the museum takes on the same authority/authenticity that its physical counterpart already espouses. The new context does not seem to alter much of its meaning.

In addition, a museum site accommodates the unique nature of museum education. Since the 18th century, education has been considered one of the founding components of the museum. However, only recently has education theory developed to a point where it can be applicable to a museum.[36] Assessments of learning in museums have shown that the immediate

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[35] Howes, Deborah Seid, "Why the Internet Matters: A Museum Educator's Perspective". In *The Digital Museum: A Think Guide*, Herminia Din and Phyllis Hecht, eds., American Association of Museums, 2007, pg. 68

[36] Hein, George, pg. 341

experience of an exhibit is fairly thin – it is only in discussion with others and reflecting upon the experience over a period of time that the full range of knowledge gained can be assessed.[37] The site can act as a resource through which the museum visit can be reenacted, through browsing the collections or revisiting the digital home of the exhibition. The digital museum can also contribute to the concept of free-choice learning – the learning a person does on his or her free time and by his or her own volition. [38]As previously noted, museums are trusted, vetted sources of information and therefore would be considered reliable sources of information for the self-imposed learning process.

Museums, however, tend to put only the most basic information available on their websites. In most cases, only tombstone information and label copy are commonly available. Occasionally, past revisions of label text are also posted, and multiple views of an object can be displayed. Rarely, complete provenance reports and past exhibitions are included. Because of the near-limitless space of the Internet and the small amount of bandwidth that text requires, museums should consider including as much information as possible. While respecting issues such as copyright and image rights, most museums with digitized collections and electronic databases should be able to include as much pertinent information as possible in order to inform the viewer and enhance the educational experience. If objects, as Steven Hamp says, are meaningless without text[39], then no object should be placed on the museum site without as much critical information as possible to fill out the full history and interpretation of the object.

The construction of the digital museum

Most museum websites follow a similar pattern – a permanent URL distinguishing it from other sites and granting an identity of a piece with its physical home[40], a top-level header displaying the logo and name of the museum, a series of menu items generally including most museum departments and highlights of the collection, recent exhibitions or other internal links presented on the index page enticing the visitor to explore the site.

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[37] Falk, et. al, pg. 327

[38] Falk, et al., pg. 324

[39] Quoted in Crew and Sims, pg. 162

[40] The URL also confers the museum's aura on the site – by providing the museum site with a unique, readily identifiable namespace tied with a general , the site gains the same authenticity as the museum itself. See Benjamin, "The Work of Art in the Age of Mechanical Reproduction". 1936, http://www.marxists.org/reference/subject/philosophy/works/ge/benjamin.htm.

While the ICOM definition of museums ostensibly leads the physical museum concept, the digital museum is distributed across a greater number of museum departments. As shown in Figures 1 and 2, the typical museum's website places many of the same links in the same areas. While some of these links may be relabeled (as in Figure 3, the homepage for the Museum of Modern Art), the functionality of the menu items remains the same. Rarely does any single field stand above others – the collection and the gift shop are often both top-level menu items, and share space with membership, calendars and "visit" links. Furthermore, the commercial aspects of the website are emphasized. Links such as "Donate", "Membership" and/or "Shop" frequently appear as top-level items, made available across virtually all pages of the site. Increasingly, as funding in the US continues to dwindle, museums look to other sources of revenue, including web presences.

Two examples demonstrated here, the main pages for the Metropolitan Museum of Art and the Louvre, are fairly representative of two different models for museum websites. The Met's site is mostly HTML-driven, with little in the way of extraneous media. It is accessible[41] via a screen reader, albeit cumbersome due to reliance on table formats, and most of it can be archived with little trouble. The design is navigable and, though the contrast is questionable in places, the text is likely legible even for visitors with low vision issues. Pages load quickly. Although the site lacks accesskey shortcuts, the pages themselves are fairly navigable via using traditional keyboard navigation. In terms of accessibility and long-term compliance with HTML standards, this site is excellent.

The Louvre site, while not diametrically opposed, lacks the base functionality that the Met site possesses. As seen in the screen view above, the site is Flash dependent, which is difficult to archive for long-term storage and viewing. In Figure 4, the source code, it clearly shows that the site is heavily dependent on Javascript elements to maintain the look, feel and navigability of the site. Javascript, while fairly standard in web development, does not preserve well nor does it lend the site easy access to disabled users[42]. Although accesskeys

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[41] Accessibility, defined as the degree of usability that physically, emotionally and/or mentally challenged individuals experience when interacting with a webpage, can be tested with WAVE. See http://wave.webaim.org/ for the accessibility tool.

[42] Elsewhere on the Louvre site is made special mention of workshops targeted toward disabled visitors to the physical museum. See http://www.louvre.fr/llv/activite/liste_evenements.jsp?nature=activite_nature_2&famille=famille_2_4&rechDateId=4&bmLocale=en, accessed 12/12/2010

are encoded throughout the page, some of the links use duplicate names, confusing those using screen readers to access the page.

The page had some functional issues as well. In order to access the high resolution images found under the "Magnify a Masterpiece!" section, the Microsoft Starlight plug-in must be installed, and the warning for this installation screen is available only in French. For those who do not speak French, the navigation becomes rather complicated. While this is an interesting way to allow high resolution, perhaps preservation quality images to be presented to viewers, the software dependence involved detracts from the experience and potentially limits those who can access the full capabilities of the site.

A Special Case: The Adobe Museum of Digital Media

Unlike a corporate museum, in which a particular brand is historicized and exhibited, the Adobe Museum of Digital Media (AMDM) purports to be a museum dedicated to digital art not originated by Adobe. The AMDM is solely a digital museum, but wrapped around the concept of a physical museum. Although the museum boasts a "building" designed by a renowned architect (Filippo Innocenti) with fixed albeit outsized dimensions[43], an imagined layout (only the lobby is detailed in the "building tour", although gallery space and an auditorium are mentioned) and the concept of "rooms" the site itself functions more as a video game or imaginary land than constructed building.

Practices

The stereotypical model of a museum – large, imposing building, collections based and exhibition driven - seems to remain in place, with the traditional, physical museum legitimating the digital, virtual museum[44]. Because the AMDM is presenting itself as a museum in the traditional sense, it should be assessed using the same theoretical framework already in place for assessing digital museums. It differs from traditional museums such as the Metropolitan Museum of Art, the Tate Modern and countless others who have established a web presence in that it was built solely as a virtual museum with no geographic

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[43] As stated in the site's "Building Tour", the lobby's dimensions are 57680 sq. meters and the towers reach 50 stories tall. "AMDM", http://www.adobemuseum.com/index.php#/atrium/quickTour, accessed 12/19/10

[44] Thomas, Selma. "Introduction". In *The Digital Museum: A Think Guide*, Herminia Din and Phyllis Hecht, eds., 2007, American Association of Museums, pg. 3

presence. Yet the lack of a tangible building or collection, the lack of history (it officially opened October 6, 2010, two months from the time of this writing) and the attempt to create something both familiar and new give rise to a somewhat scattered, uncertain environment for the viewer familiar with a more conventional museum model. In addition, a sense of professional museum policy does not seem to be present, either in the mission of the museum or in the launching of the site. While it is still in its earliest stages, the AMDM has numerous issues, and its status as a museum may be called into question.

Policy

The AMDM follows traditional museum organization conventions with a director and a curator. The curator, Tom Eccles, is well credentialed, having been executive director of the Center for Curatorial Studies at Bard College, and clearly embraces the role of museum professional. However, the museum's director, Rich Silverstein[45], is an advertising executive and graphic designer with what appears to be very little museum experience. Although this connection is not as strange as it initially appears[46], a fledgling museum, especially one proposing to be among the first dedicated to virtual art, might do well to have someone versed in museum practice to direct, at least initially. Issues mentioned earlier such as authenticity and the authority of the museum cannot be easily addressed, especially with what could be a promising new model for museology, and the AMDM, in choosing a businessman for the directorship has clearly made a decision not to consider the more intricate points of museum policy at this time. The museum tour also states that the curatorship is revolving, suggesting that future curators may not be quite as well-versed in museum policy as Eccles appears to be.

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[45] Silverstein is a partner in the design firm Goodby, Silverstein and Partners, and helmed the team which developed the museum concept.

[46] "Creating a collection required the ability to make careful selections from the profusion of objects that had become more widely available during the eighteenth century and especially into the nineteenth…. New things became more easily available to a wider range of people than ever before, especially in the department stores that sprung up alongside museums in the expanding cities. Museums and department stores sometimes borrowed design features from one another, and both put objects on display through the tantalizing technology of the vitrine or glass case, in which things could be seen and admired but not touched, the possessive appetite whetted but not immediately satisfied." Sharon McDonald, "Collecting Practices". In *A Companion to Museum Studies* (2006), Wiley-Blackwell, pg. 86

Unlike the traditional museum, where education has played a role since at least the 18th century[47]outreach and education opportunities seem meager to nonexistent. While the museum's mission appears to mitigate this lack of interpretation by stressing its availability, this should not dissuade the AMDM from developing at least some guided outreach tools. Currently, there is no menu listing available for education, nor are there critical thinking exercises, label copy or other guiding information to help viewers interpret the exhibition. If objects are mute in and of themselves as stated earlier, and if the digital museum is to be interpreted in the same terms as the physical museum, then the lack of contextual information for the digital objects may indicate a lack of museum policy in effect. If this is true, then the AMDM is not a museum so much as a digital art gallery, and misleads the viewer by claiming an established, culturally situated authority it does not have.

Mission

The museum's stated mission is "to showcase and preserve groundbreaking digital work and expert commentary to illustrate how digital media shapes and impacts today's society". There is little in either the mission or the site itself to suggest, however, that the exhibits present here could not find a place in a traditional museum. The format of the site does not necessarily force the viewer to understand the objects in strictly a web-based environment, and the current exhibit on display is not terribly interactive to a degree that would require a different type of venue in order to display the works. Although the mission statement claims the AMDM is a "repository" of digital exhibits, not a single statement on preservation or conservation is mentioned anywhere on the site.

The mission continues, however, to state that it also acts "as a place to reflect on the importance and impact of digital media in our lives". Here the AMDM stands a chance of presenting something new to the museum environment. While little is in place to suggest that a plan to enact this part of the mission is available, it is important to state this as one of the goals of the museum. The revolving curatorship, including "business leaders" is disturbing in a traditional museum context. Yet, in a museum that claims to allow reflection

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[47] The Ashmolean Museum in Oxford, England, widely considered the first public museum, has always been tied to Oxford University; the keeper taught at Oxford one-third of his income. In a more general sense, the American public museum was expected to perform a number of functions, including "the training of craftsmen to improve manufacturing design, the orienting of recent immigrant populations to a unifying culture and the elevation of morals and manners." Jeffrey Abt, "The Origin of the Public Museum". In *A Companion to Museum Studies* (2006), Wiley-Blackwell, pg. 124, 132

on digital media, it may prove to be important in understanding the connection between digital art (a fully creative endeavor without mandate) and the companies that make the tools to develop those works.

Perhaps the greatest weakness of the mission statement is that an audience is not defined. The "accessibility" of the museum in temporal terms ostensibly broadens the audience to anyone with an Internet connection, but without a defined audience, the museum has no idea as to whom it is addressing.

Exhibition

The AMDM appears to be purely exhibitions-driven. While the AMDM does not have a full-time exhibition staff or a permanent collection, this does not preclude either of these positions from appearing in the future. Indeed, the mission statement suggests that a permanent collection is possible, even desirable.

Questions of narrative, curatorial intent and visitor initiative find a new relevance in the digital museum. Boundaries are placed by the virtual museum to lead the viewer toward the understanding that the curator had in mind when developing the exhibition. In this fashion, digital museums follow the traditional museum in that the physical experience of the visitor is dictated in part by layout and partly by narrative. In a website, however, layout is meaningless and narrative, while outlined by the curator/artist, is ultimately determined by the visitor. Subtle clues are provided instead – words, theme, sound.

The AMDM acts more like a traditional museum than a website in that it is fully self contained and the site layout impacts the visitor experience. The "building tour" treats the viewer as a visitor on a docent tour, leading him/her through the digital landscape and inviting the visitor to "browse the galleries". Yet with only one exhibit on display, and with that exhibit's menu rendered in a single page, requiring the visitor to return to the menu to explore another "room", the idea of browsing is more like a traditional website with strictly internal linking.

The initial exhibitions will be designed by American artist Tony Oursler and Japanese conceptual artist Mariko Mori – only Oursler's is available at the time of this writing (December 2010). Like a traditional museum, exhibitions function on regular rotations, although the schedule of exhibitions is not publicly stated, nor does it appear to be fixed.

Digital objects have differing preservation and conservation concerns from physical objects, and this may contribute to the conception of the objects in the collection over time (or their inherent instability; will future versions of Flash support the older/oldest objects?) At the moment, this particular digital museum functions little differently from a non-museum Flash driven gaming site, in which clicks are rewarded with a specific outcome.

Unlike a collection based museum (but like a science or hands-on museum), theme gains importance over more traditional museum conceits such as interpretation. While a linear narrative is more or less nonexistent, a forced narrative remains in place. External links or content are nowhere to be found. While this in itself is not surprising, the functionality of the current exhibit feels myopic and limited, but also grounded in a traditional model. Today, however, while physical museums are looking outward and attempting to install multimedia content and some Web content alongside exhibits, the AMDM seems to shy away from any kind of externalities. This may be understandable considering its origins, but if this is in fact museum policy, it limits the functionality of future exhibits.

Accessibility

"There are no guards here and we're always open" declares the museum tour. However, the limits of bandwidth, available technology and visitor time impact the digital museum experience in ways a physical museum need not negotiate. The museum site is heavily Flash-oriented and errors are not easily navigated. When this site was being tested, a loading issue was discovered in the "dark side" and "fantasy" sections. The site abruptly quit and sent visitors back to the main exhibit screen.

Despite, or because, Adobe owns Flash and would be expected to employ significant Flash elements into the site, the load time for the introduction can be painfully slow and users without the current or most recent previous versions of Flash may find it difficult to navigate the site. When researching for this paper, this site was tested by the author on two computers (a Macintosh G4 and a Toshiba PC), and significant lag time was noted on the older iMac[48]. Neither computer, however, performed swiftly, and occasionally screen resolution was choppy. The site's main screen took up to 45 seconds to load, but some internal pages, such as the exhibition itself, were somewhat faster.

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[48] iMac specifications: G4, 1.44MHz processor, 768k RAM. PC specifications: Intel Pentium Dual@2.16 MHz, 4 GB RAM.

Although museums, being intensely object based, are mainly visual experiences, websites can interact with visitors with other sense-based cues in ways traditional museums cannot, or not easily. Accessibility for Flash objects is limited at best, affecting many visitors, particularly the vision impaired. In the end, while the museum claims to be "accessible anywhere", it is highly technologically dependent and therefore only truly accessible to those with the right equipment to load the pages.

Lastly, the site does not address display issues such as color, sound or scale, problems the digital world has encountered since its inception. The technological layers between the viewer and the site limit the accuracy of the display, potentially impacting the viewing experience. Because the AMDM is so visually intense and focused specifically on digital art (which will always require a computer and screen at the very least to render the artwork), it would perhaps be useful to develop a tool to help users adjust their screens to ensure the most accurate viewing experience possible.

Conclusion

Perception is everything. In the physical museum, authority is granted in visual and verbal terms, using label copy, placement of objects and the building's design. Authenticity, a thornier issue, acts as a component of authority and is maintained by the belief of the audience. When carrying this package of meanings and metaphors to the digital sphere, the museum experience is somewhat recreated – white-box visuals, isolated objects, label copy and tombstone information all appear. The branding of the museum is carried through as well in colors, logos and, where possible, photographs of the physical museum.

The digital museum, however, allows for a more equitably distributed use of museum resources. Along with education, collections and exhibitions, most museum sites prominently display links to the gift shop, membership and donation pages, encouraging visitors to spend money on what they see. This fostering of consumerist culture within the museum is nothing new; what is new is the museum's direct awareness of the connection and its attempts to exploit it.

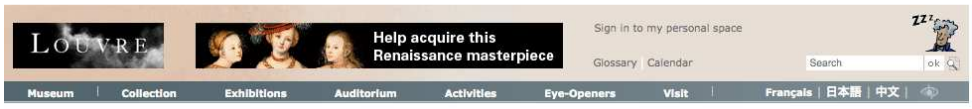
Concepts of museology, however, can be easily abused in a nontraditional forum. The AMDM claims the authority of a traditional museum while following little of the policy or procedure. Although it exhibits top artists and claims a preservation and educational basis in

its mission statement, nowhere else on the site does it appear that these claims will be met with any real effort. The site also boasts a "building" and a revolving curatorship, underpinnings for an attempt at legitimacy, but until other museum policy needs are met, these gestures are empty.

The ultimate failing of the AMDM, however, is its unwillingness or inability to act on its potential. Digital museums have the ability to make tangible objects take on new meanings and relevance by displaying them in action. The AMDM, while partially interactive, does not permit a strong level of reflexivity on the part of the viewer, and little in the current work on display (Tony Oursler's "Valley") suggests that the work cannot be exhibited in a physical museum. The works are in motion, but the user has very little say in what the narrative of the exhibition will be. In this way, it acts more like a video game or a movie than a museum exhibition.

The digital museum, as a resource for the physical museum, is quite successful. As an independent entity, there may be more work ahead. The digital museum may yet redefine itself again, as audiences demand more from their museum experience and as curators and educators seek to make their works more relevant to an ever-widening audience.

Fig. 1 – The Metropolitan Museum of Art website. Note that "Works of Art" is exploded and how each object within is equal to one another, yet the highlights include membership, donations, the gift shop and current exhibitions.



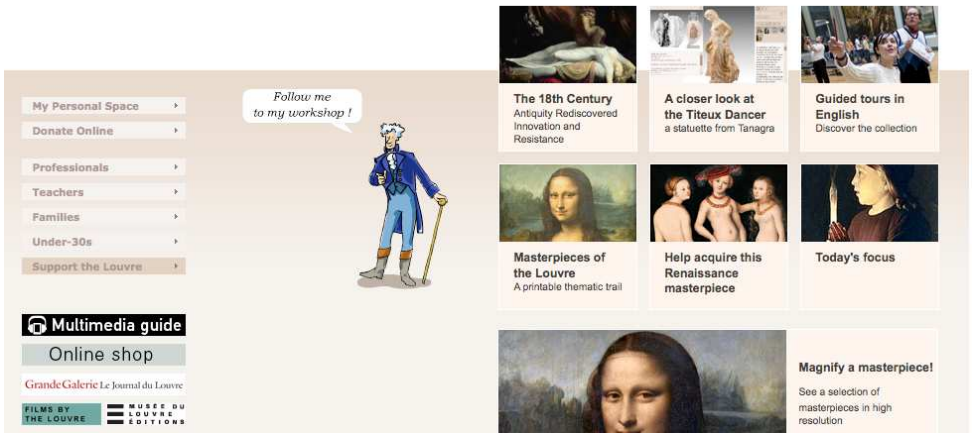


Fig. 2 – The Louvre website main page. The Flash graphics displaying the interior of the museum do not appear in this screen capture. The top level headings include "Auditorium", "Museum" (a history of the Louvre) and translation into Japanese, Chinese and French.

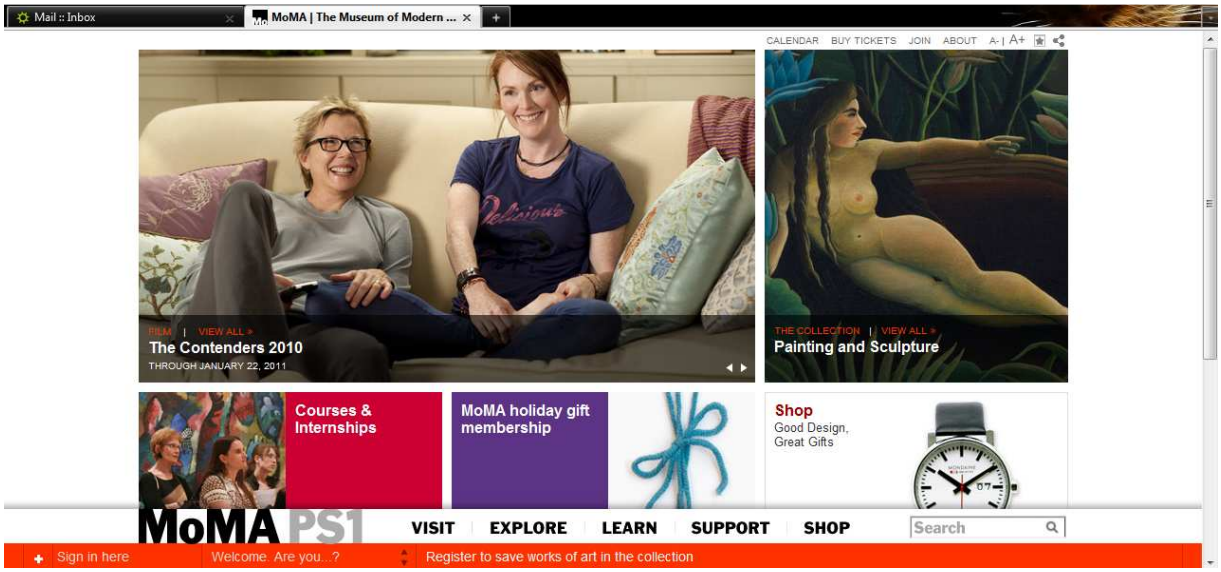


Figure 3 – The homepage for moma.org. Note the different menu names, but also note that they correspond roughly to both the Louvre and Met menu items.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.o
<html lang="en">


<head>
    <!-- Page M24_011 -->
    <title>Masterpieces of the Louvre – Accessible Self-Guided Tour | Louvre Mu
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <meta name="keywords" content="Activité , Musée du Louvre " />
    <meta name="description" content=" On their first visit to the Louvre, peop
   <style type="text/css" media="all">@import url("/templates/llv/styles/style.
    <script type="text/javascript" src="/templates/llv/javascript/navmain.js"><
    <script type="text/javascript" src="/templates/llv/javascript/general.js"><
    <script type="text/javascript" src="/templates/llv/javascript/postit.js"></
    <script type="text/javascript" src="/templates/llv/javascript/oeuvre.js"></
    <script type="text/javascript">
        function MyOnLoad() {
            init();
            document.getElementById('cheminPhys2').style.display="block";

            scrolltextInit(0);
        }

        var popAide = "aideDetail";
    </script>
```

Figure 4- Sample source code view for the Louvre website.

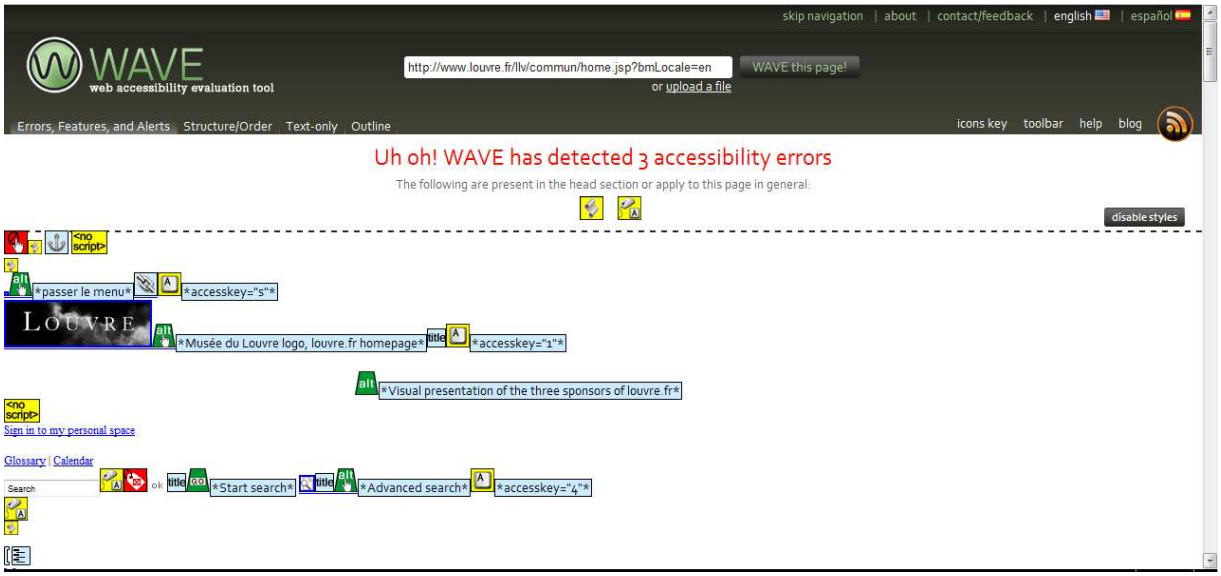


Figure 5 – A screenshot of WAVE analyzing the Louvre website for accessibility.

Figure 6 – The error screen for “Magnify a Masterpiece”. The page sends the visitor to the French-only language site.