



# The Economic Valuation of Digital Media Art

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## Abstract

While there are a variety of approaches to examining the valuation of digital media art, I limit my discussion to its economic valuation within the context of Western capitalist economies. In this essay, I argue that the dematerialized and reproducible nature of DMA requires it to have alternative models of economic valuation because the classical model of economic valuation does not effectively value DMA. I examine existing economic models of digital media artwork valuation and I explore unique opportunities for alternative and hybrid economic models of digital media artwork valuation.

## Keywords

digital media art, economic valuation, new media theory, art valuation, cultural studies, art, value, digital art, collectors, artwork

## Introduction

While there are a variety of approaches to examining the valuation of art including social, atomistic, and phenomenological philosophies, due to the restrictions on the length of this essay, I limit my discussion to the economic valuation of digital media artwork (DMA) within the context of Western capitalist economies. Before delving into valuation and DMA, it may be instructive to define value, analogue art, and DMA in the context of this essay. I will define value as the financial worth of a desired entity. While analogue art may be categorized as art that is created using analogue media and include works such as drawings, paintings, prints, and sculpture, DMA may be categorized as art that is created using digital media and processes, using electronic hardware and software, including videos, 2D images, 3D models, animation, sonic arts, Net Art, generative art, installations, and digitally augmented performances. In this essay, I argue that the dematerialized and reproducible nature of DMA requires it to have alternative models of economic valuation because the classical model of economic valuation does not effectively value DMA. I examine existing economic models of DMA valuation and I explore unique opportunities for alternative and hybrid DMA economic valuation models.

## Classical Model of Economic Valuation

The classical model of economic valuation (CMEV) in Western capitalist economies outlines how objects can be exchanged for currency using the laws of supply and demand; when the demand for an object outweighs the sup-

ply of the object, the price for the object increases (Ng, 2014; Smith, 2000). Applying the CMEV to both an original analogue artwork and a DMA with high demand in the marketplace, the current impossibility of reproducing an exact copy of an original analogue artwork (e.g. a one-of-a-kind painting) limits the ownership and accessibility of the original analogue artwork and grants it a higher economic value than a DMA file that is losslessly replicable (e.g. a digital image). When an original analogue artwork is in short supply, a situation that rarely occurs with DMA because of digital media's infinite lossless duplication, and there is a high market demand for an original analogue artwork, the economic value of the original analogue artwork normally increases in the marketplace.

For example, the original Mona Lisa only exists in the Louvre and because there is only one original painting, a high economic value is assigned to the Louvre's exclusive ownership of the Mona Lisa. People interested in experiencing the Mona Lisa in person place an economic value on gaining limited access to the one-of-a-kind original by paying admissions fees to visit the Louvre. Based on the CMEV, original, physical, analogue works of art that are limited in supply, like the Mona Lisa, are assigned a high economic value because they are original artworks and exact copies cannot be reproduced from these original artworks (Sturken & Cartwright, 2001). In the CMEV, the artworks' economic valuation is based on their one-of-a-kind nature and the limited availability and exclusive ownership of the original artworks.

The CMEV, based upon limited availability and exclusive ownership, is more difficult to apply to newer forms of reproducible, lossless DMA and the arrival of DMA has created a paradigm shift in the traditional way artwork is economically valued. In 1936, Walter Benjamin (1968) helped set the stage for challenging the CMEV by arguing that the practice of placing higher economic valuations on one-of-a-kind images was losing currency because of the introduction of new forms of reproducible art using media like photography and film. Indeed, DMA are often reproducible, dematerialized, easily accessible, and lossless. As Sturken and Cartwright (2001) explain, an "image being unique makes no sense with digital images" and in "digital images, the idea of the difference between a copy and an original is non-existent." This lossless reproducibility of DMA challenges the CMEV because DMA cannot be effectively economically valued based on their scarcity and physical materiality; copies of DMA can each potentially hold the same value since each copy of an original DMA is lossless and identical to the original work. This ease of access and ability to reproduce DMA that is lossless dis-

rupts the CMEV and necessitates the exploration of alternative economic valuation models for DMA. Before examining opportunities for alternative and hybrid models of economic DMA valuation, I will explore emerging economic models of DMA valuation within the context of Western capitalist economies.

## Emerging Economic Models

Despite the growing interest in DMA in Western capitalist economies, it is unfortunate that in the West, especially in the U.S., many overlook art's contribution to culture and the public good and primarily value art for its exclusivity and economic return (Groys, 2011). However, the impact that economic valuation has on DMA cannot be overlooked; DMA disrupts the CMEV. The above-mentioned Mona Lisa example is poorly applied with DMA. Indeed, the laws of supply and demand where the value of physical objects is based upon their scarcity and availability is upended by the immateriality, availability, and lossless reproducibility of DMA. This disruption in the CMEV provides unique economic valuation opportunities for DMA.

A large part of DMA's unique economic value lies in its reproducibility; DMA's dematerialized nature allows it to be accessed across platforms, time, and space. Instead of traveling to a physical gallery to purchase analogue art for future delivery, DMA can be immediately bought and downloaded online. Moreover, the bits and bytes that make up DMA enable its infinite reproducibility; in fact, DMA's lossless reproducibility provides opportunities for a wider distribution network than that of analogue art. One could envision the economic valuation of a particular DMA "going viral" with thousands of people connecting to it. Even if only a fraction of the people who access the viral DMA purchase it for a lower price than the price of a one-off analogue painting, the economic valuation of the DMA could be significant. In this example of a DMA "going viral," the CMEV is upended. Despite the infinite lossless copies of the DMA, the economic value of the DMA does not necessarily diminish; a large aggregate number of purchasers of the infinite, lossless copies of the DMA could result in a high valuation of the DMA.

The economic valuation of DMA stands in stark contrast to the CMEV where exclusive ownership and limited availability determines valuation. Digital media artists are disrupting traditional economic models of valuation, but the age-old question of how artists are compensated remains unanswered for many digital artists; with DMA's wide availability, many digital media artists' work does not fit in the closed, classical art market valuation models. Like Van Gogh, who found funding sources outside the CMEV early in his career, digital media artists are seeking alternatives to the closed, classical art market sales models to economically support their practice (Huyghe, 1977).

While the Internet increases the global exposure of DMA by opening up more venues for the immediate purchase and distribution of DMA, challenges and resistance to the economic valuation of DMA are manifold. For ex-

ample, many people expect DMA to be free like other forms of digital culture such as free eBooks, music, photos, and videos. People, particularly digital natives, have become socialized to expect free or very low cost cultural content and resist paying for DMA (Ng, 2014). The expectation of free creative work presents unique challenges for digital media artists struggling to find support for their practice. There needs to be an extensive examination of the opportunities for the economic valuation of DMA, but due to length restrictions, I am not going to address obvious solutions like institutional admissions fees and traditional gallery sales models of analogue art. Instead, I will look to those existing models as a springboard for emerging and alternative economic valuation models.

## Ownership and Leasing

Although the music industry ownership model is flawed, it is instructive to examine it to inform future models of DMA economic valuation. In a now near historical model of digital music economic valuation, people purchased physical media like compact discs (CDs) to listen to music. As digital technology evolved, people "ripped" and shared CDs by creating digital files that were available to download from the Internet. Just as musicians received reduced royalties for their work from sales of CDs and digital files, this admittedly flawed model has been used to economically value DMA (Witt, 2015). Museums and artists have sought to overcome the challenges of economically valuing reproducible DMA by selling "limited-edition" CDs and DVDs from exhibitions. For example, the Whitney Museum of American Art (2001) sold DMA CDs from the Bitstreams exhibition, but this economic model is becoming outdated as physical media are becoming less popular and dematerialized DMA files on servers in the cloud are becoming more popular (Delson, 2001).

Sales and exclusive ownership of art are not new, but the immateriality of DMA presents unique challenges and opportunities for collecting that differ from those associated with analogue art. For some collectors, ownership of DMA, with its dematerialized and reproducible nature, may be less attractive because it does not fit their understanding of an artwork's economic value as inherently being linked to materiality and exclusive ownership. Leasing DMA is an opportunity to economically value DMA by providing DMA to collectors who are risk-averse to owning DMA or unable to afford to own DMA outright.

The paradigm shift in the music industry of people moving away from economically valuing the ownership of physical media like CDs to people listening to music on dematerialized media like streaming digital files opens up other DMA economic valuation models including ad-supported, subscription, and free satellite and online platforms like SiriusXM, Spotify, Apple Music, and iTunes Radio. This shift in the economic valuation of artistic work away from the physical ownership of creative work to temporarily accessing dematerialized creative work creates new economic valuation challenges because of the wealth of services providing low-cost or free content (Witt, 2015).

Digital media artists can examine the online music distribution models to inform their creation of improved DMA economic valuation models. One avenue they can choose is selling permanent or temporary licenses to exhibit DMA. Digital media artists can build upon the licensing and sales models used by such entities as Netflix, Apple, Amazon, and saatchiart.com or create their own online platforms to sell or lease DMA. They can harness new technology by selling licenses of their DMA across a wide variety of existing and emerging Internet-enabled delivery platforms including PCs, mobile and wearable devices (e.g. watches and clothing), and cloud-connected smart homes and vehicles. These new DMA platforms could provide artists more income than existing and legacy distribution models that charge exorbitant commissions and fees (Puente & Mansfield, 2015).

Digital media artists can provide DMA valuation models by offering licenses to own or lease DMA in physical and virtual spaces. These models would be different from the CMEV used in galleries selling analogue art or museum gift shops selling prints of paintings. For example, streaming DMA could be distributed and exhibited on digital displays for a limited amount of time or permanently (depending on the length of license purchased) and removed without the use of a physical dustbin. Limited time ownership of DMA grants economic value to DMA by providing the opportunity for experiencing DMA on a select number of devices for a specified duration. As collectors become increasingly aware of DMA, they have a greater opportunity to appreciate it and therefore are better able to economically value DMA.

Brick and mortar galleries are experimenting with representing DMA that combine the physical with the virtual and creating hybrid licensing agreements. These limited edition pieces combine computer, display, and software with physical forms. Gering & López Gallery employs hybrid licensing when it sells these types of hybrid DMA by artists like John F. Simon, Jr. Similarly, the DMA project "Earth," was licensed from John Klima for \$1,000 a year for display in the National Library of Medicine building (Delson, 2001). Licensing agreements can add economic value to DMA; by harnessing and adapting the CMEV with limited availability and ownership, exhibit admission fees can be employed to increase DMA's economic value in the marketplace. Additionally, collectors willing to pay more for lifetime exclusive licenses provide economic value to DMA and a potential source of income for the artist.

Just as musicians, including Metallica, who famously encountered challenges from some audiences who resisted economically valuing digital music files because they were socialized to collect free music files from Napster, artists selling DMA encounter challenges from people who resist economically valuing dematerialized DMA because they expect DMA should be free (Puente & Mansfield, 2015). Additionally, some collectors who subscribe to the CMEV may not believe DMA holds as much value as analogue art because DMA is dematerialized and can be losslessly re-

produced. Just like music, DMA, dematerialized and reproducible, is easily distributed and can be leased for a specified period of time and cost. Although not perfect solutions, owning and leasing DMA provide economic valuation models for DMA.

### **Applications**

Using online free search engines like Google as inspirations, digital media artists could develop applications (apps) to create economic value for their DMA. In developing these apps, digital media artists could use Google and similar search engines' business models; they could gather user search information, collect this valuable information, and sell targeted ads to users to economically support their DMA. Digital media artists could work collaboratively on DMA apps that these artists could then sell and use to exhibit DMA files. In this model, artists would develop their own apps; charge fees for the use of apps; sell exclusive, limited rights to exhibit DMA on apps; or sell apps that function as the DMA itself. Artists would receive compensation and their DMA would have an economic value; less technologically savvy artists who are unable to create their own apps could add their work to a database of searchable DMA on an existing app and receive remuneration if their DMA is purchased. Such independent DMA apps could provide economic value based on the popularity of views and purchases of DMA.

## **Hybrid and Alternative Economic Models**

### **Morphing Borders**

Traditional analogue artwork, like paintings and sculpture, are morphing across borders from the physical world to the dematerialized world of digital paintings and virtual 3D sculpture. This morphing provides opportunities to compensate digital media artists who sell downloadable DMA files for printing at home or for 3D models of sculptures that can be physically 3D printed for exhibition. Emerging forms of DMA technology and techniques are being used to assign economic value in unexpected ways.

For example, the Van Gogh museum in Amsterdam gained financial support from the proceeds of its sale of digitally 3D scanned and 3D printed Van Gogh paintings from its collection. Indeed, museums "are taking a close interest in the commercial potential of 3D" (Alberge, 2013). The money from the valuation and sales of the DMA Van Gogh paintings, dubbed "Relievos," help fund the museum's operations and assign economic value to DMA. Just as the Van Gogh museum was successful selling 3D printed Van Gogh paintings in the above example, there is a potential for individuals to purchase DMA files online and add economic valuation to DMA.

Similarly, the Cooper Hewitt Museum has experimented with hybrid economic valuation models for DMA by exhibiting physical work that combines dematerialized digital code with material 3D prints. Employing a hybrid exhibi-

tion and economic model that bridged both immateriality and materiality, the Cooper Hewitt Museum created an auction dubbed “The Algorithm Auction.” This inaugural auction was set up to introduce DMA to a wider audience and to introduce patronage like the philanthropy of Andrew Carnegie (Turner, 2015).

Considering DMA’s potential for materiality with 2D and 3D printing, DMA is in a unique position for economic valuation as the trend of customizing cultural artifacts increases. Unlike analogue artwork that is not easily customized, DMA is unique in that it can be customized at any stage of the purchasing process. For example, on-demand 2D and 3D printing provides the customization of DMA in real time granting collectors options for scaling the size or color of DMA to be printed on site. In fact, collectors who want a distinctive artwork to suit their individual tastes may pay a premium to adjust the size or color palette of DMA so that they can create a uniquely designed DMA.

### Trending Green

Because of the immateriality of DMA, it is also greener and more ecologically sound than analogue art. As the anti-consumerist and green movements gain momentum, a segment of the population is placing economic value on DMA because of its small ecological footprint, portability, and ability to be shared digitally. There is an emerging market for collectors who do not want to acquire and store physical works of analogue art. As DMA is lossless, reproducible, customizable in real time, and ecologically friendly, DMA requires a valuation model that accommodates the burgeoning anti-consumerist and green movements.

### Conclusion

Although the Van Gogh and Cooper Hewitt museums are illustrative examples of institutions that have economically valued DMA, it is important to recognize that DMA is ushering in a paradigm shift from the CMEV applied to analogue art and requires alternative economic valuation models addressing the uniqueness of DMA. The models of leasing; subscribing; streaming; permanent, temporary, and hybrid licensing; apps; and on-demand virtual, physical, and customizable ownership are examples of DMA economic valuation that differ from traditional analogue art economic valuation. This essay provides opportunities for providing value to DMA in valuation models that are not based solely upon scarcity, exclusive ownership, and materiality, and in doing so, upend the CMEV. While traditional examples of economic valuation including charging admission fees and limiting the physical ownership of art are points of reference, the emerging opportunities for DMA’s economic valuation are evolving along with experimental valuation opportunities. Indeed, DMA’s unique, dematerialized, and reproducible nature and the impact of the rapid pace of technological development on DMA make DMA’s economic valuation a constantly moving target necessitat-

ing the continued exploration of emerging economic valuation opportunities for DMA.

It is critical to find economic valuation models that maximize and preserve DMA’s uniqueness and its differences from analogue art because society is in danger of permanently losing a cross-section of contemporary DMA and culture. Importantly, as Grau (2010) notes, DMA is “rarely collected by museums, not included or supported within the mainframe of art history and nearly inaccessible for the non North-western public and their scholars.” Therefore, according to Grau (2010), “we witness the erasure of a significant portion of the cultural memory of our recent history.” If this lack of support for and possible deletion of DMA were not enough, DMA is threatened with further marginalization because of the challenges associated with its economic valuation. In Western capitalist economies, strengthened by growing neoliberalism, economic value is still predominantly based on the CMEV and its valuation of exclusive ownership and limited availability. Although there has been some limited success with the economic valuation of DMA, there is still a long way to go toward developing successful economic valuation models that leverages DMA’s unique characteristics.

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