



INTERFERENCE OF TECHNOLOGY IN THE FINE ART MARKET

Nitin Kumar

Research Scholar

Department of Fine Arts

OPJS University

nitin.kanimator@gmail.com

Dr. Anupam Bhatnagar

Research Guide

Department of Fine Arts

OPJS University

Abstract

Technology, art Most of us connect great art with paintings and sculptures, not technology. Technology touches the fine art sector at numerous locations and in many ways. The study examines how technology affects fine art.

Keywords: art market, art and technology, art transactions

Introduction

The essay is part of a bigger study on the Romanian fine art industry as a worldwide participant. During investigation, we found places where technology impacted conventional methods. The article examines how technology is affecting the fine art sector and its externalities.

Problem Statement

Our goal was to determine how technology affects the art market. Our examination began with the books and proceeded with internet art publications. Baumol and Bowen's 1968 book *Performing Arts - The Economic Dilemma* is the first significant economic examination of performing and artistic arts. Baumol and Bowen (1968) found 'the cost disease' and 'productive gap,' which helped comprehend this market. Mark Blaug published *The Economic of the Arts* in 1970, and William Hendon and his colleagues launched *The Journal for Cultural Economics* at the University of Akron (Edinburgh). Thorsby and Withers released *The Economics of the Performing Arts* in 1990. Victor A. Ginsburgh and David Throsby released *Handbook of the economics of the arts and culture* in 2006. Starting in 2000, economic literature grew; Ruth Towse released *A Handbook of Cultural Economics* in 2011 and Iain Robertson and Derrick Chong published *Understanding International Art Markets and Management* in 2005. Auction houses and specialized art dedicated latforms started publishing relevant articles regarding the art market results; there are annual detailed analyses - "Art Basel & UBS Report", performed by dr. Clare McAndrew, founder of Arts Economics; ArtTactic (Art Market Research & Analysis for The Art World) analyzes auction results, publishing regularly reports regarding the economic results of the art market. Deloitte publishes the annual report *Deloitte Art & Finance*, which analyzes the status of the art, trends, art as an investment, risk, and laws. In the previous two decades, art and cultural economics literature has grown alongside the market, indicating rising interest.

Research Questions/Aims of the research

The study aimed to determine where and how art interacts with technology, given its beneficial social effects.

Research Methods

Multiple sources and online financial information are utilized to highlight and analyze trends in the three years preceding COVID. Data analytics, blockchain, drones, and AI were considered for the study. Online articles, surveys, podcasts, and interviews with cultural

domain experts, art and humanities literature, subject-specialist publications, and financial information are used to find art and technology connections.

Findings

Even though it began later, technology has altered the fine art industry. COVID has pushed galleries and cultural organizations to embrace digitization sooner to be closer to audiences. The technology also impacts how artwork is sold, priced, or recognized for provenance. Art's function varies as technology and design influence our environment and society.

The economic art act and externalities of the artwork

Few dealers and purchasers were ready to trade money for art in the past. Demand and supply are determined by budget and customer taste, which may be modified via education. Initially, artists created frescoes, for which they were paid individually based on skill. Rich people fostered art, so we may enjoy frescoes in Italy, Venice, Milan, and Florence. The result was written in stone. The artist was compensated for a unique work that couldn't be relocated. The recipient, typically a church, paid for materials and commissioned painters, who then employed apprentices. The fee will include supplies, the artist's salary, plus lodging and food (if the case). The economic interactions were straightforward, with a focused topic and simple language (Howard, Britannica, 2017).

People visiting the church may appreciate the paintings, and the church would profit from the painting's message. Different artists from other areas may visit the chapel and reproduce the artwork, but not perfectly. It was inspiring and stimulating. Similar transactions were made for the king's castles and palaces. In time, painters started to paint on canvas, to discover more pigments and techniques. It was fashionable among the rich people to have the portraits drawn by a painter and exposed in their house; it was a sign of wealth.

The main economic value in this case is brought mainly to the owner and gives the owner a statute, increased more respect, bringing to the family better deals. The economic externalities are not so obvious in this case, and they are identified for this period only when the artworks were brought to museums or the castle itself was transformed into a museum.

For a very long time, the canvas served as the artists' primary support. The artist's position abruptly shifted from being a witness to their present moment to being surprised by reality when photography was found. The development of photography altered how the public saw paintings and their function.

As soon as reality could be replicated, people stopped needing more realistic landscapes and portraits and instead began using paintings to express social and political life or to reflect the human mind. Salvador Dali was one of the participants in the surrealist movement that Freud's unconscious created in the twentieth century. The most important aspect is that the artwork conveys a message; the painter intended to share something with the world and did so by developing new patterns, using unique viewpoints, and producing artwork rather than just duplicating natural phenomena (see Mark Rothko, Barnett Newman or all the modern and contemporary painters).

Furthermore, when many artistic disciplines were combined in contemporary times, they underwent transformation. We are supporting the visual and performing arts, where we can observe a fusion of modern dance, music, and lighting, producing a singular experience for

viewers; the artistic results of the performance are eaten during the performance. It resembles modern dance or theatrical more. In this instance, the show is the only value we have. There is no real benefit; instead, individuals in attendance enjoy the opportunity of helping with the performance.

One possible externality is the notoriety the attendee will get via social media, allowing viewers who couldn't make it to the event to watch through the media, official channels, or postings made by viewers on social media. This could only be feasible in situations when recording and using the phone are permitted.

The art market has two sub-markets: the primary market, where the original sale of an artwork occurs, and the secondary market, where additional sales of the artworks take place. The aforementioned analysis was conducted from the perspective of economic transaction. On the primary market, the artists, dealers, and galleries are the key participants, but on the secondary market, the key players are the auction houses. The online auction sites that offer both new and used artwork for sale have created a hybrid market that combines the first and second submarkets of the art market.

Interference of the technology in the art

As was already said, the artist has progressed from conventional painting to digital painting utilizing various modern tools, as well as to virtual or augmented reality. The exchange of art for money, as it once was, is no longer the exclusive method of payment for creative work. Today, we recognize instances when artists and other supporters of the arts willingly provide free labor to a project with the pleasure of improving society and preserving it for future generations.

There are instances when they are supported by various funds (such as Fine Art Unions, Cultural Institutes, or other organizations), or we have exhibitions and digital art projects that are primarily supported by businesses for marketing reasons. Funds from the European Union have been set aside for initiatives supporting Creative Europe. These are all connected to the artistic performance and how it engages the audience. The art has changed as the globe and society have changed in response to technological advancements. We've included some of the major developments and trends in the realm of fine art below:

Online Presence

In the last ten years, there has been a considerable growth in internet presence, leading to new opportunities for the sale of artwork. There are several sorts of hybrid platforms that pool the pool of artists, galleries, and dealers to provide a broad and diversified selection of artworks, starting with artists having a presence on social media and having the choice to sell directly online.

As can be seen in Figure 1, the value of sales of art and antiques online worldwide in 2019 was anticipated to be \$5.9 billion, accounting for 9% of all such sales worldwide (Art Basel, 2019).

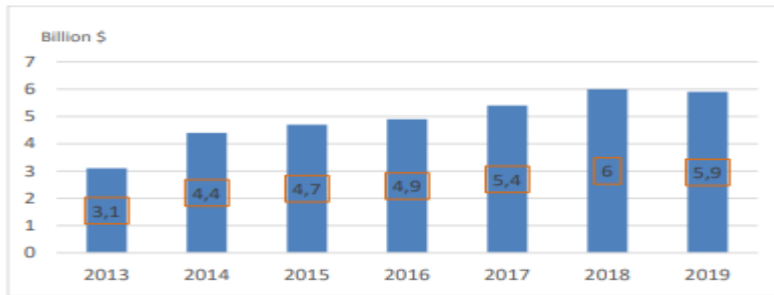


Figure 1. The online Art and Antiques Market, 2013 – 2019

This percentage is lower than worldwide online retail, where e-commerce constituted 12% of total retail sales in 2018 and is anticipated to reach 18% by 2021. Online art sales have increased at a slower rate than general retail e-commerce, which grew 23% year-on-year to \$2.8 trillion in 2018 and is predicted to reach \$4.9 trillion in the next three years (Art Basel, 2019).

In the first half of 2020, internet sales grew due to the pandemic, but not as much as conventional sales decreased (Art Basel, 2019).

Art Basel and UBS Global Market Report (Art Basel 2019) identified two key groups of internet players:

a) Galleries, artists, and retail category:

- i) 'Retail category' is represented by platforms with a mostly online presence, concentrating on art works, with online curators who assist buyers find works they would enjoy; prominent players include saatchiart.com, art.com, yellowcorner.com, theartstack.com.
- ii) Amazon.com, eBay.com, and Etsy.com are third-party shopping platforms. In this situation, the platform offers the vendor the chance to sell to its enormous consumer base.

b) Auctions:

I "Bricks and clicks" is represented by reputable, well-known auction houses that allow their collectors to place online bids during their sales. The home uses specialized software, and the buyer connects to the platform to place real-time bids similar to those made over the phone. The top international companies in this market are phillips.com, lauritz.com, dorotheum.com, sothebys.com, and bonhams.com.

ii) The "online only" group is made up of websites that only exist online, hold their auctions there, and notify their members by email. The most notable websites in this category include artnet.com, artprice.com, ebth.com, auctionzip.com, and lavacow.com.

iii) "Third party platforms" are websites where various galleries, dealers, and artists are linked together to provide a platform for prospective customers. A direct sale or an auction might be used for the transaction. The-saleroom.com, invaluable.com, auction.fr, auctionzip.com, liveauctioneers.com, artsy.net, is the key websites that represent this category.

Artnet and Artsy, which each attract close to 4 million visitors each month, won the top global rankings for art-specific websites from the aforementioned categories.

The rising presence of online sales on the worldwide market and innovative methods of bringing together many companies on one platform that offers a sizable and varied portfolio of artwork are indicators of the total economic effect.

Art with Artificial Intelligence (AI)

CAN: Creative Adversarial Networks Generating "Art" by Learning About Styles and Deviating From Style Norms, was published in June 2017. (Elgammal et al. 2017). A fresh method of producing art was suggested by the scientists. They expanded on Generative Adversarial Networks (GAN), which have shown to be capable of learning how to create new pictures that mimic a certain distribution. They contend that these networks are constrained in their capacity to produce creative products according to their original design, so they proposed changes to their goal to enable it to produce creative art by maximising departure from established aesthetics and minimizing departure from art distribution. They performed tests to examine how human participants reacted to produced art and how they reacted to art made by artists. The findings demonstrate that human participants were unable to discriminate between artwork produced by the suggested method and modern artwork shown in prestigious art shows.

In October 2018, Christie's sold Portrait of Edmond Belamy for \$432,000 at auction. A Paris-based art group called Obvious used artificial intelligence to produce the picture. An algorithm and a database of 15,000 portraits painted between the 14th and 20th centuries were used to create the artwork (BBC, 2018). This AI artwork's instant positive economic effect is shown by the fact that it sold for substantially more than its Christies estimate of \$7,000–\$12,000, despite being valued at that range. The worth of this piece of work is primarily determined by its originality, the fact that it is the first AI artwork to be sold at an auction house, and its significance as a historical artifact and a testament to the era in which it was created. Future AI art pieces will be valued according to their usefulness and financial potential as seen by those who are prepared to invest in such works of art. The value that people place on each piece of art will determine its price, as will its quality, the customers' preferences, and their perception of its usefulness.

Google Arts & Culture (Waters 2011) Google's web platform and app provide high-resolution photographs of artworks at partner museums. Started with 17 institutions, including London's Tate Gallery, New York's Metropolitan Museum of Art, and Florence's Uffizi, it now includes museums throughout the globe, democratizing and demonetizing museum admission via virtual tours. The economic value is the positive economic externality achieved by offering access to a broad variety of people who may not be able to go to museums and see art works. 3D, augmented, and virtual reality will alter this.

The use of drones for creating arts opens a wide range of possibilities; the drones can be used by an artist to create a piece of artwork as such, or to redesign the city landscapes and homes.

New York-based new media artist KATSU. He works with technology, vandalism, commercialism, and digital culture. His work combines graffiti, digital media, and conceptual art (Wikipedia.org 2019). Precision is necessary for drone graffiti. He is one of the first individuals to conduct drone graffiti, and he reached an exceptional degree of accuracy, enough to pursue a longtime vision of "sending my drones out my bedroom window, having them render my marks all over the city, and then coming back home to me, like, in my bed."

• Carlo Ratti Associati's Paint by Drone initiative became UFO-Urban Flying Opera in July 2019. Professor Carlo Ratti states, "The city is a blank canvas where individuals may write

their tales." With UFO - Urban Flying Opera, we aimed to speed such processes by using drone technology to allow for a new use of painting as an expression. (Tumblr2019)

- The ICARUS ONE hardware and software lets painters spray enamel like a drone. First Open-Source Paint (IcarusOne.com, 2018)

Misha Most (2017), a Russian artist, displayed "Evolution 2.1" in September 2017 in Moscow, exhibiting how an artist might use a drone as an assistant. The artist's vision was implemented by Interactive Lab, which produces gaming apps integrating VR and AR. The firm produced VR solutions for galleries and real estate (Interactive lab 2018).

- In May 2019, Disney Enterprise sought for a patent for a drone-based painting system (see Patent application, (United States Patent and Trademark Office 2019)). The drones have a pan-and-tilt paint nozzle. External power is linked to the drone to enhance flying duration. The drone's internal controller enables autonomous painting without human input.

- TERNITY's blockchain and drone technology boosts urban art. ternity and Voliro create The Graffiti Drone. The Mexico City drone graffiti project combines blockchain's crowdsourcing and preservation processes with drone graffiti's programmability (Dronegraffiti.com 2019). A blockchain may store digital items including photographs, code, and instructions. Connected to programmable drones globally, this technology can paint the same picture over time and space. Three chosen artists created urban art on city walls and on the blockchain during Mexico City Art Week, February 8-10, 2019.

How all of these interfere with the economic aspects of our lives. First, the redesigning of the cities landscapes it's an externality brought by applying this type of art in the city. The economic externality can be either positive or negative, depending on everyone's perceptions. The project itself, in our days is usually financed by a private or public organization, bearing the costs and the benefits of creating such art in the city. The possibility of redesigning the city landscapes translates economically thus: decrease of salaries and the risk for the persons which were previously involved in painting the walls, lower number of persons will be involved in this activity if such drones start to be used.

Reduce wall-reaching metal scaffolding. This will reduce with time, but not much as the drone simply paints and doesn't fix the walls. Reduce wall-painting time. The above is offset by higher prices for the drone's battery energy and painting supplies. Economic impact is currently being analyzed.

Conclusion

The art market is affected by technology. There are new business models, financing sources like crowdsourcing, means to connect artists, and ways to sell art. The economic elements of art and technology are still developing, and the results may be observed in how governmental policies incorporate creativity and arts on the agenda. Drone-augmented or virtual reality will change the environment and our lives. The economic approach and pricing will also alter. COVID will force the industry to innovate. The essential dilemma remains: Is today's art a memory of future, like Renaissance murals, given technological advances?

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