# The Impact of Innovative Technologies on Contemporary Media Arts Evolution

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**Abstract:** The work is devoted to media art as a broad, dynamically developing area of contemporary art based on the use of media as tools for creating, distributing, and presenting works of arts. It is shown that contemporary media art embodies such important ideas as a work with an open form, interactive interaction of the viewer with the work, the viewer's creativity, collective creativity, shifting the emphasis from the result of creativity to the process, the use of interactivity and virtuality as expressive means, the unification of life and art, and the democratization of artistic forms. Particular attention is paid to the consideration of the paradigm shift in the distribution of the roles of the artist and the viewer, as well as in the characteristics of the environment for creating a contemporary work of art, the elemental composition of this environment.

Keywords: media arts, digital art, AI, co-creation, viewer's role, virtual space.

## 1. Introduction

Media arts, which are distinguished by their vitality and quick growth, play a critical role in molding the characteristics of our contemporary society. From film and television to digital platforms and interactive installations, media arts have staged a revolution in our means of communication, self-expression, and perception of the world around us.

Media arts have a significant influence on culture, communication dynamics, and the vast sphere of human creativity. These forms of artistic expression act as powerful mirrors, reflecting the different cultures, beliefs, and ideas that inhabit our world. In this age of immediate connectedness, media arts easily distribute information and narratives throughout the world. Crucially, media arts have the ability to effect social and political transformation (Wang et al., 2023). Furthermore, the combination of media arts with emerging technology promotes creative innovation. The advent of virtual reality, augmented reality, and interactive installations provides immersive experiences that immerse audiences in storytelling in ways never seen before. Finally, media arts move beyond just amusement and artistic endeavor. They are instructional instruments that enable people to express their ideas, experiences, and dreams.

The renewal of artistic practices is primarily associated with the renewal of means of expression (Mota & Pereira, 2024). Changes in the artistic process, due to the development of technologies, occur in two directions: related to the renewal of the material base and related to digital technologies. The main characteristic feature of modern art is its interactivity, that is, the ability for the viewer to contact the artist and participate in the creative process. At the same time, the biggest difference between most digital arts (VR art, digital art) and traditional ones is that it exists only at the moment of its creation and requires the direct presence of the author or viewer. As a result of technical innovations, new principles for building exhibition spaces have emerged, the process of transporting and exhibiting works has been modernized, and the potential for exchange and cultural ties has expanded. It has become possible to virtually attend art events on the Internet and view museum exhibits from any corner of the world. Anyone can create art objects and freely distribute them on social media. All this creates a renewed perception of reality, directing social experience into the visual realm.

Digital technology has surely changed how we make art nowadays. The digital era provides us with an unparalleled set of instruments for creating art and various art forms for expression, resulting in a distinct aesthetic form. Furthermore, modern technology introduced new media that challenged the conventional

notions of medium, artwork, artist, and audience and had a significant impact on traditional, non-technological media such as painting, drawing, sculpture, and so on (Rohotchenko et al., 2021a, 2021b). Hybridization and media convergence have transformed conventional media, culminating in the post-media scenario.

Today, there is a need not only to study the possibilities of using the latest technologies in art, but also to define "the art of the latest technologies" as a set of technical means that artists use in the process of creating an artistic image at various stages – from sketching (graphic computer programs) – to means of exhibition (projection displays and screens, light and sound equipment, etc.). Researching the issue of the interaction of creative ideas and their practical implementation, determining the role of using the latest technologies in the artistic process is a relevant problem for modern art history. In this context, studying the evolution of contemporary media arts under the influence of innovative technologies represents relevant task both in theoretical and practical planes of media arts discourse.

## 2. Theoretical Framework

Although technology-based art is regarded as the "final avant-garde of the twentieth century" (Rush, 2005), and digital art has been incorporated into the mainstream art world since the late 1990s (Paul, 2019), the philosophy of digital art is still a developing subfield. Three landmark monographs, one on videogames (Tavinor, 2009), one on digital cinema (Gaut, 2010), and one on computer art, have been crucial in establishing the framework for philosophical discussions about art and technology. Since these publications, the digital arts have received more philosophical attention, including the first published collection on the aesthetics of videogames (Robson & Tavinor, 2018). Philosophers sometimes struggle to keep up with the fast development of digital technology. However, a number of recent publications on artificial intelligence in the arts demonstrate that philosophers are fully aware of and prepared to address this problem (Atencia-Linares & Artiga, 2022; Millière 2022; Moruzzi, 2022; Roberts & Krueger, 2022). The body of philosophical work on AI art, as well as work on virtual reality in art and Internet art, will undoubtedly continue to increase. With this expansion, we may expect to learn much more about the scope and nature of the digital cultural revolution.

Media arts serves as a dynamic and effective mirror, reflecting the complex fabric of cultures, beliefs, and ideas that span the globe. Through a variety of disciplines like as cinema, music, literature, and visual arts, artists are given a unique platform to explore the depths of cultural identities, traditional beliefs, and pressing modern challenges. These different creative manifestations act as a bridge of connection, encouraging a rich interchange of cultures and a greater understanding across countries that may be separated geographically (Dolkeles, 2024).

The new digital media have called into question the old notions of medium, artwork, artist, and audience. According to Manovich, the conventional medium concept was challenged because new artistic media included and combined many forms into a single work, and some of the media aimed for dematerialization of the art object, implying that the new forms were not media in the traditional sense (Manovich, 2001). Furthermore, conventional media experienced several metamorphoses, most recently reaching the post-media situation, in which all media are combined to form a self-contained universal medium. Rosalind Krauss discusses the most significant notions about the so-called "post-media" in art criticism, as do Lev Manovich and Peter Weibel in new media studies. Regardless of the differences in keywords, there is a common understanding about how to analyze the impact of digital technology on creative forms and practices (Bakreski, 2022).

Technological advancements and new media challenged not just the old notions of medium, artwork, artist, and audience, but also our standard human brain and perceptive powers. With the introduction of the computer-simulated world (VR and AR), we are witnessing a tremendous shift in our optical perception and consciousness. A mixed reality system creates a better environment in which the computed (virtual) and uncomputed (corporeal or actual) coexist and interact. Immersion is central to the majority of Nechvatal's study, an experience that is firmly ingrained in virtual reality and the burgeoning immersive cultural awareness. Nechvatal defines immersive art as a momentary manifestation of the desire to exist in an anti-mechanic condition of growth, a meta-symbol of human potential. Furthermore, he defines interactivity as the immersant's capacity to self-modify (selfre-program) their sense of self, rather than the ability to manage and alter the virtual environment (Nechvatal, 2001).

Since the second half of the 20th century, the art process has been completely determined by the development of technologies: the 1960s - video and audio, later - computer technologies, and at the end of the century - the Internet, which become the starting point for the emergence of new art forms. Contemporary art transforms visuality in a new aspect, since it is a response to the needs of the viewer (Talamo, 2023). This renewal is directly related to virtualization: natural human vision expands with the development of technical means capable of seeing what is invisible to human vision and showing what does not exist in principle, which has led to a change in creative consciousness and the emergence of new forms of artistic practices.

Artificial intelligence has radically changed the landscape of creative creation by bringing sophisticated capabilities that allow computers to not only make art autonomously, but also considerably improve human artistic attempts through deep collaborative processes. This deep integration of AI into the artistic workflow blurs the lines between technology and traditional creative approaches, ushering in a new era of digital artwork. One of the most spectacular instances is the ability of deep learning models to synthesize large datasets including a rich tapestry of historical artworks, present trends, and varied cultural expressions (Hutson & Morgan, 2023). These models use complicated algorithms to assess and learn from these data points, producing visually appealing results that challenge and broaden human perceptions of aesthetics and creative expression.

The notion of cooperation in the arts is dramatically altered by AI, which serves as both a tool and a collaborator in the creative process. This cooperation frequently takes the form of co-creation, in which artists define parameters and goals while AI provides possibilities and iterations. For example, in the field of digital and visual arts, AI algorithms may produce several design possibilities, which the artist can subsequently polish or combine to create the final artwork. This strategy can greatly shorten the trial process, allowing artists to investigate more complicated or combinatorially difficult concepts (Chi, 2024). Furthermore, in performance arts such as dance and theater, AI may be used to generate and control dynamic settings that respond to the motions of the performers in real time, impacting the performance and resulting in a responsive, adaptive form of creative expression. These interactions between human creativity and algorithmic accuracy result in a new hybrid form of art that challenges our traditional view of the artist as the solitary creator, instead introducing a paradigm in which human and machine intelligence coexist and complement one another.

Contemporary art frequently seeks to disturb, challenge, and engage audiences in ways that classic art forms may not. It typically confronts complicated social, political, and cultural problems, challenging the boundaries of what constitutes art. This approach is consistent with the modern aesthetic focus on experience and interpretation (Patel et al., 2024).

Moreover, in modern art, the viewer plays an important role. Unlike conventional art, which generally conveys a clear story or aesthetic, modern works usually allow for interpretation, inviting active engagement. This interactive aspect is consistent with modern aesthetic theories that see art as a dynamic interaction between the artwork and the observer. Philosopher John Dewey's idea of "art as experience" emphasizes this participatory interaction. Dewey claimed that art is more than just an item; it is an event that incorporates the viewer's perception and emotional reaction. Contemporary art, with its ambiguous and open-ended character, exhibits this concept by requiring viewers to add their own experiences, feelings, and thoughts to the artwork (Khan, 2025). Value co-creation and interactive art became distinct elements of modern media arts, resulting in a paradigm change in the roles of the artist and the audience. Contemporary art and aesthetic philosophy are inextricably linked, with one informing and enriching the other. Contemporary art's broad and inventive techniques call into question established aesthetic theories, prompting philosophers to reexamine the nature of beauty, art, and taste. Contemporary aesthetic theories, on the other hand, provide useful frameworks for understanding and appreciating contemporary art's complexity and multidimensional character. As modern art evolves, it will definitely stimulate more philosophical investigation, pushing us to examine, analyze, and interact with art in novel ways. This dynamic interplay keeps modern art and aesthetic theory alive, current, and inextricably linked.

## 3. Methodology

The work was carried out in accordance with methodological principles based on a systemic representation of the process of evolution of contemporary media art as a complex, multi-aspect project-artistic system. Taking into account the complex content of the phenomenon of media art, in addition to

the methods of contemporary art history, the methodological tools of other humanities - philosophy, psychology, sociology, communication theory - were also used in the work. The theoretical and methodological basis of this study are scientific works on philosophy, theory and history of art, culture, aesthetics, psychology of art.

## 4. Results and Discussion

The latest technologies are so fascinating to artists today that experiments often replace all other meanings and purposes of art, giving rise to the 'art of technology'. The new potential for manipulating space, interactive systems and the Internet, as well as 3D, 4D, augmented reality, virtual reality, have radically expanded artistic boundaries.

Among AI artists, those who design their own deep learning systems are more likely to describe AI as a creative collaborator rather than a creative tool. This appears especially appropriate when the artist collaborates synchronously with their DL system. Sougwen Chun, for example, creates his works by sketching alongside and in reaction to the activities of a mechanical drawing arm controlled by Chun's custom-made program, D.O.U.G. (short for "Drawing Operations Unity Generation X"). Chun and D.O.U.G. take turns adding to the same drawing. During this process, it is more difficult than one might expect to determine what distinguishes Chun as a creative agent engaging in a creative drawing process, as opposed to D.O.U.G. This is true despite the fact that Chun is the sole creator of the work and the initiator of the sketching program.

Contemporary art is characterized by an international artistic language, experimentation, and interactivity (Hope & Ryan, 2014). It does not simply reflect reality, but models it, appealing to updated, "dynamic" types of forms that would be based on modern scientific developments and lead to the development of non-traditional technologies that contrast the passive consumption of a cultural product with the cosmogony of a different, including digital, interactive reality, which requires the preparation of the viewer, capable of perceiving high standards of elitist modifications of art and the culture of its perception (Jia & Fang, 2023). Thus, 'updated' art, using new media, forms cognitive pictures of the world and a new art geography, which is relayed both on the Internet and on global art platforms. The digital arts industry is increasing and is anticipated to reach USD 39.4 billion by 2032 (see Fig. 1). According to ZION Market Research, the worldwide digital art market size was valued approximately USD 12.04 billion in 2023 and is anticipated to increase to around USD 39.40 billion by 2032, with a compound annual growth rate (CAGR) of roughly 14.08% between 2024 and 2032.

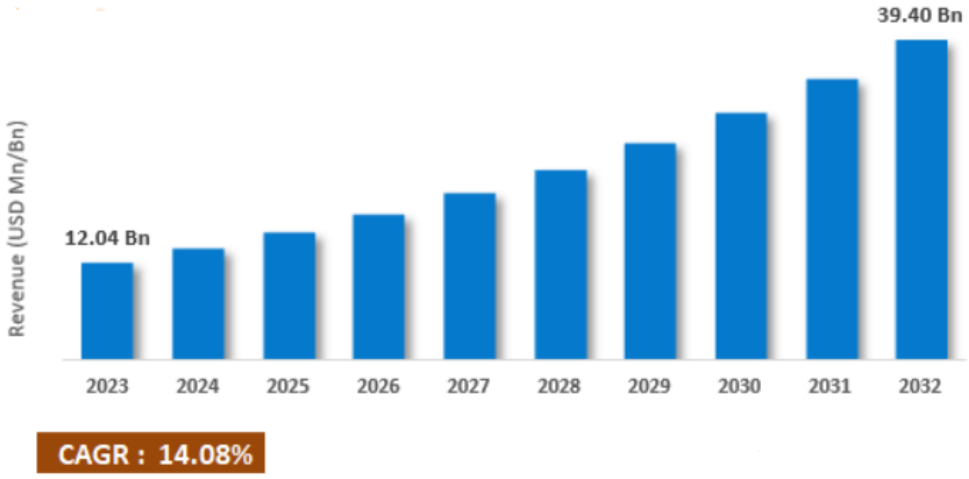


Fig. 1. Global digital art market size, with forecast, 2018-2032 (USD billion) (ZION Market Research, 2024)

One of the distinctive features of contemporary art is experimentation. Video artists comprehensively use the latest video and television technologies, destroying the boundaries between realities - natural and artificial, between art and life. Numerous streams of data, whether produced internally by a computer program or from an external input device, can be combined into one by computers. Thus, they are able to create new artificial worlds and artwork. A set of settings may be used by the human

controller of this process to change the output, resulting in diverse virtual worlds or artwork. The latter are novel world types that could be completely original or they might have traits in common with the real, natural world. They convey the human creator's imagination (Earnshaw, 2021).
Although these artificial worlds are largely made up, artists and designers may use them and people can engage with them. If the virtual environment resembles an architect's drawing of a structure, a designer could want to alter some parts of the picture to improve the building's exterior or make a room inside the building more useful. Here, the user is in charge of the interaction and how it affects the design process as a whole.
When creators and collaborators are working together on a specific project or item, virtual worlds may bring them together in a single setting. It is also possible to incorporate the whole public as watchers or participants. The authors may want to add changes to the produced content that the public provides.
The development of digital databases and archives is among the most significant technological developments in art history. They make it possible for scholars to view excellent photos of historical records, artwork, and other objects from any location in the world. This significantly streamlines and improves the effectiveness of the research process. To give users even more access to a wide range of content, these archives may also be combined with other platforms. By using these digital tools, scholars may perform more thorough and precise examinations and get a better knowledge and study of art. Technology is transforming the history of modern art by making it more inventive, efficient, and accessible. They provide new avenues for cultural heritage protection, promotion, and study. Researchers from around the globe can work with high-quality photos and papers thanks to digital archives and databases, which significantly streamlines information access and improves the efficiency and convenience of the research process. A large audience may appreciate art at any time and from any location thanks to virtual museums and exhibits, which promote cultural heritage and draw in new admirers.
Museums have turned from a traditional place of displaying exhibits and informal interaction of visitors into a versatile social and cultural institution, and the role of the viewer has changed from the category of "cultural recipient" to "cultural experimenter" (Khan, 2025). The ways in which visitors interact with museums have expanded from one-way viewing and discrete perception to multidimensional experience and interaction.
In order to engage with its viewers, an online art show (Fig. 2) may be created with the goal of incorporating those interactions into subsequent material. This results in a dynamic show that goes beyond the original area and content. It transcends national and cultural borders and is accessible worldwide due to its online format (Mack & Ojalvo, 2011). Wrexham Glyndwr University's Art Expo serves as an illustration of both a virtual and physical display (Earnshaw, 2021).

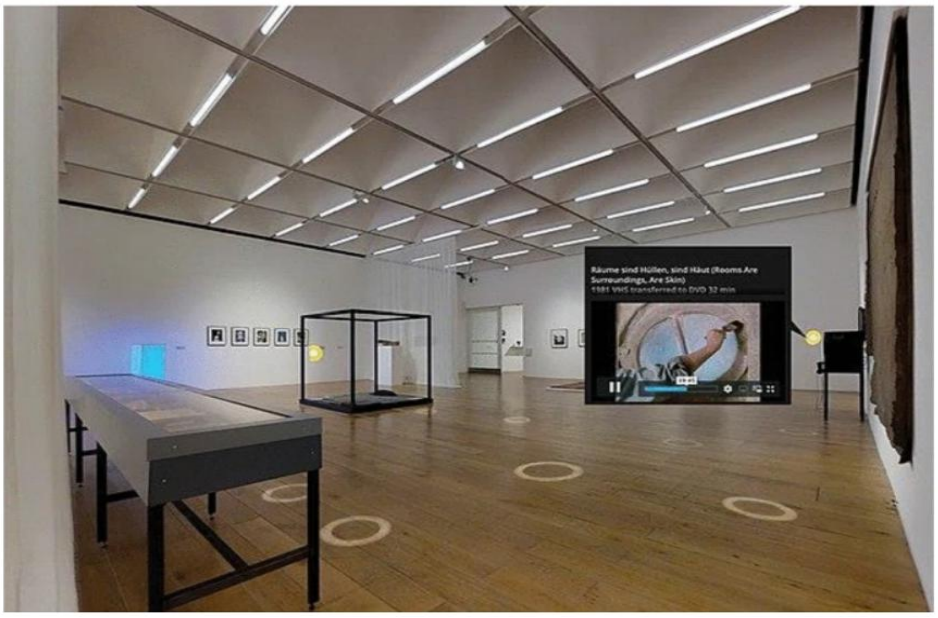

Fig. 2. Virtual exhibition produced by V21 Artspace, The house of fame, convened by linder at nottingham contemporary. This file is licenced under the creative commons attribution-share alike 3.0 unported licence (Earnshaw, 2021)

Although there has always been room for creativity at the nexus of art and technology, the development of artificial intelligence has sparked a revolution in modern art that has never been seen before. AI's potential goes much beyond the simple use of tools; it has a significant impact on all facets of artistic expression, from the production process to audience engagement and art reception. AI's incorporation into creative activities represents a profound cultural shift that influences the creation, appreciation, and perception of art rather than just a technical advancement. Because AI-generated art raises concerns about the role of the artist and the creative process itself, this progression forces a reexamination of the fundamental essence of art and creativity. In order to push the limits of what art can be in the digital age, artists and engineers are working together more and more and employing AI to explore new avenues for engagement and expression. Numerous specialists currently discuss the intricate relationships between AI and modern art, looking at both the advantages and disadvantages for the conventional art industry (Auer et al., 2024).

A digital computer's power may be utilized to run algorithms that generate a range of lines, colors, and forms. These can then be combined to create images and sent to a printing device. Such digital art has been shown at exhibitions either in a separate part or in conjunction with conventional art. The originator of a digital work is not always obvious, unlike traditional displays that focus on the works of the people who made them (Mironova et al., 2022). However, the underlying algorithm that underpins the computation was created by a person, even though the computer analyzed the data and produced the digital artwork. Thus, just as the iPad was a tool in David Hockney's hands, the computer might be considered a tool in the hands of a human creative. His pieces were displayed at conventional art shows. It is possible that an artist's choice of tools becomes more acceptable the more well-known they are (Dolkeles, 2024). Before any new tool can be completely standardized and accepted, its pioneers must demonstrate how it may be utilized.

Paul (2019) asserts that virtual reality technology has revolutionized the way people consume art. Viewers may become fully immersed in an artwork thanks to virtual reality technology, which makes the experience more captivating and immersive. Collectors and art lovers may now buy art from anywhere in the globe more easily thanks to online art marketplaces. Anyone may now acquire art, regardless of geography or financial situation, thanks to the democratization of the art industry. Although technology has generally had a good influence on the art industry, others are worried about the authenticity and provenance of digital art and NFTs, as well as the depreciation of traditional forms of art. To prevent the value of art from being degraded, it is crucial to strike a balance between the preservation of traditional art forms and the application of technology (Paul, 2019). The creation and consumption of modern art have been profoundly impacted by technology. Examples of how technology has affected art creation include the emergence of digital art, improvements in 3D printing, and more accessibility for artists. Anyone may now more easily collect and enjoy art thanks to virtual reality technology and online art marketplaces (Balletti et al., 2017). It will be interesting to observe how the art world develops in the future as technology advances.

One of the biggest effects of technology on the art business has been the democratization of the field. Without the need for conventional gatekeepers like galleries and museums, technology has enabled artists and art lovers from all over the world to communicate, collaborate, and exhibit their work. A greater variety of voices and viewpoints are now represented in the art world, which is more inclusive and varied as a result of this improved accessibility (Wagner, 2020). According to Handke and Dalla (2022), social media sites like Facebook, Instagram, and Twitter have helped democratize the art industry. These platforms have given artists a strong tool to display their work and connect with a worldwide audience. Artists may reach prospective customers and partners by using hashtags and tailored marketing.

Media arts have an amazing ability to go beyond traditional borders and interact with audiences deeply, creating a close relationship between political reality, cultural dynamics, and creative expression. The smooth blending of art, technology, and communication fuels this transformational potential, making media arts a formidable tool for bringing about change, exposing injustices, and influencing the path of public conversation (Adeloye et al., 2024). Let's examine an engaging case study that demonstrates the power of media arts in bringing about significant change in order to demonstrate this effect in action.

An enduring example of the transforming potential of the arts in the midst of sociopolitical upheaval is the Arab Spring, a historic wave of upheavals that reverberated throughout the Middle East and North Africa in the early 2010s. Long-simmering grievances, a strong yearning for change, and societal unrest all came together to define this turbulent time of transition. In the midst of this intricate web of variables,

media arts, driven by the new force of digital activism, took center stage as a unifying and empowering force that cut across national borders, sparked discussions, and gave voice to the dreams of innumerable citizens who long for freedom, justice, and dignity. The captivating art of digital storytelling, which allowed regular people to share their viewpoints with the world, record events, and communicate their feelings, was at the core of the Arab Spring's resonance. Social media sites turned into online galleries that vividly depicted stories of tyranny, resistance, resiliency, and optimism. Digital tools' accessibility and immediacy made it possible for these tales to cross national boundaries, igniting a sense of empathy and solidarity among viewers throughout the world who then raised their voices in support of the calls for change.

The many digital forms of media arts have become a powerful tool for uniting the voices of people from different parts of the world. Through powerful images, moving movies, and moving hashtags that cut across linguistic boundaries, the public's anger against authoritarian governments, economic inequality, and social injustices was expressed. Beyond simple documentation, these digital artifacts gave the movement an emotional resonance that touched individuals all across the world, inspiring emotions of solidarity, outrage, and common goals. Media arts had a real impact on the real world during the Arab Spring, and their influence extended beyond virtual realms. Mass rallies, marches, and acts of civil disobedience were the manifestation of the virtual rallying calls (Downey, 2014). The effectiveness of fusing online activism with offline mobilization was shown by the capacity to plan and coordinate activities using digital channels. The combination of media arts and physical presence highlighted these instruments' capacity to bring about tangible social change.

Finally, as raw materials and culture evolve over time, so do the artifacts and pictures that are created. The creators' and humans' thoughts evolve and change. This synchronicity and interconnectedness provide a continuous tale about the artworks and their makers. This narrative may transform the original setting and culture into something entirely different.

Just as digital art may help us comprehend interaction, it can also help us understand artistic creation and credit. This is partly due to the intimate relationship between interaction and creativity. When creating a work that is extremely interactive, the artist gives the user some influence over the appearance, sound, and structure of the work's displays. This highlights the subject of the user's ability to be creative and participate with a work, as well as how the artist's design might promote or hinder these potential. To address this dilemma, we must first define creative control. Furthermore, we must evaluate how numerous agents active at various phases of a work's development might contribute to its originality. As it turns out, the instance of AI art is very relevant in examining the prerequisites of creativity and creative cooperation.

## 5. Conclusion

As technology advances, contemporary art history is changing dramatically. Innovative technologies and methodologies expand the scope of artwork inquiry, analysis, and display. From the establishment of digital archives and databases to the use of virtual reality to visit exhibits, technology is altering how we interact with art. Digital technologies influence art history and provide fresh views for experts and the general audience. Contemporary art is a dynamic genre that includes a variety of styles, materials, and ideologies, frequently defying established limits and encouraging varied interpretations.

As technology advances, traditional forms of art are increasingly being combined with digital art, creating new opportunities and problems. As technology advances, it will most certainly continue to affect the art industry in both positive and harmful ways. Artists, collectors, and aficionados must examine the potential and problems given by these innovations, as well as discover strategies to balance conventional and digital art. The ongoing expansion of technology in art opens up great opportunities for the future, but it is critical to understand the possible implications and strive toward a responsible and sustainable approach to the junction of art and technology.

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