



# Future Technology Series: The Future Technology in Art Report

JUNE 2019

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## Foreword on the Future Technology Series: Art

Thank you to all contributors to our third Future Technology report in 2019.

Each year over \$64 billion worth of art is traded in the industry. It is estimated technology could help take that to \$100 billion soon. Graphic design, Photoshop, digitally created music, e-books, 3D printing etc, the list con go on thanks to technology, meaning an artist is now not restricted to just one or two mediums... Art has always pushed the boundaries and, coupled with technology, there is an increasing sense of 'boundless possibility'. It's not only changing the tools for producing art, but also impacting how art is experienced, shared and collected.

Technology is making art far more diverse and accessible. Digital is offered alongside physical art. Virtual museums allow more people than ever to see exhibitions they wouldn't have reached otherwise. Virtual (VR) and augmented reality (AR) are offering new ways to experience art, fractional ownership is democratising art investments, and blockchain technology is aiming to bring greater transparency to the art market.

At the same time, the rapid pace of change is opening up practical and philosophical questions – such as who owns art created with the help of technology, how to protect work from replication, and can works created by artificial intelligence (AI) still be considered art? What is clear is that technology is impacting art, and vice versa.

As we increasingly integrate technology into our everyday lives, so too will we continue to harness it for creativity and therefore art.



**Maria Pavlinova**  
London Technology Club  
Memberships & Marketing Director

## About the London Technology Club

The London Technology Club is a community of family offices, private and institutional investors, venture capital firms, technology experts and influencers. The club combines co-investment opportunities, education and relationship-building opportunities in the tech sector under one umbrella and provides access to competitive VC funds with attractive returns.

We organise events with leading technology visionaries, entrepreneurs and investors. A number of prominent international investors are members of our Advisory Board, such as Mikhail Fridman, Co-founder of LetterOne; June Felix, CEO of IG Group; Christ Rust, GP of Clear Ventures and ex-Partner at Sequoia Capital; and Itzik Parnafes, GP of Battery Ventures.

*The Future Technology in Art* is the third in our series of six Future Technology reports across 2019. In February we published the *Future Technology in Formula One™* report, and in April we published the *Future Technology in Wine*. Both were accompanied by fascinating panel debates at our partner venues: The Royal Automobile Club and 67 Pall Mall.

The fourth in the series will be *Future Technology in Longevity* in early September following a summer break. This will be closely followed by the fifth and sixth in the series towards the end of this year. Thank you to everyone that has contributed to our reports and events to date – roll on the second half of the Future Technology Series across the rest of 2019.



**Simon Pavitt**  
London Technology Club  
Chief Operating Officer



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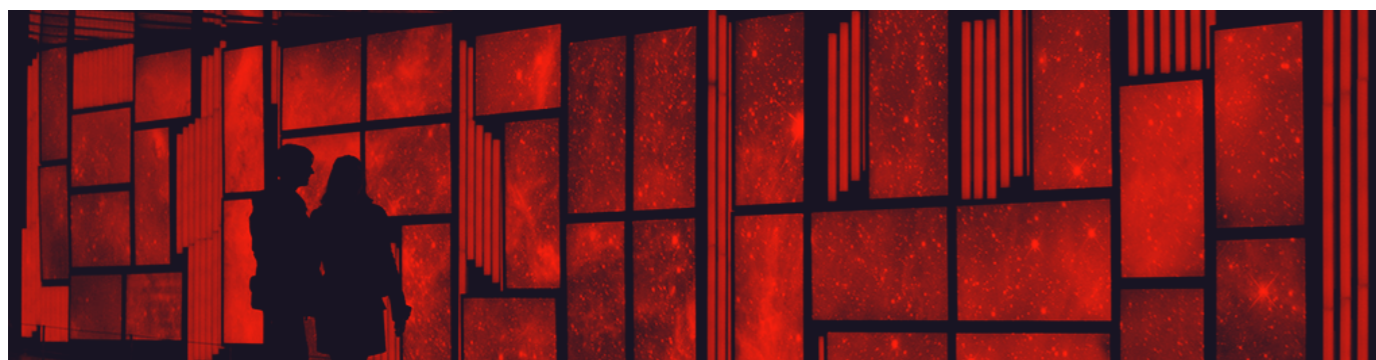
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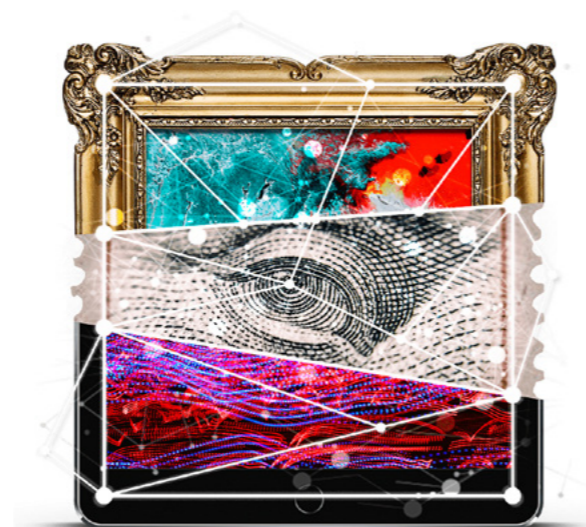
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# 01 The Vision Summary

*“The tokenisation of the artwork allowed me to take partial ownership of my favourite artists without spending millions”*

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cially support me. Of course, I don't have to write each individual letter – my machine learning-enabled printer has taught itself my handwriting. Such platforms have allowed me to become free from the financial constraints of having to create to sell. The financial support frees me up to not worry about creating something with buyers in mind. I can think freely without commercial considerations. I know I have the financial safety net to express myself...



I check out my sales online on Daata Editions and Sedition. I also look at the New York Stock Exchange to see how my fractional investment in a Picasso is doing since its IPO. I also invested in a Warhol on ArtSquare, it was as easy as buying a coffee. The tokenisation of the artwork allowed me to take partial ownership of my favourite artists without spending millions. I just purchased tokens ensuring a fractional ownership. From art lover to digital artist to art investor. I also go and check for its actual value. A simple dashboard informs me that it has constantly increased since I purchased it meaning more people are believing in its beauty. I like the knowledge that I could, at any time go on the secondary market and sell my tokens. Like any other financial asset, it's now easy to find other fine art investors all over the world who desire to take part ownership of it.

My virtual personal assistant has learned my preferences and finds the new release from one of my favourite sculptures online that I, and a few of my friends have all purchased from before. Our group have all set an automation that whatever the artist releases we all buy the 3D digital blueprints, and so the recommendation is automatically accepted. Once again blockchain confirms the blueprint is official and so my 3D printer reproduces it for me. No need for replicas to be delivered to us these days.

I have a conference call with one of my partner galleries that want to re arrange the layout of my exhibition after they have tracked visitor flow. They show me the data and I agree for them to make revisions. It's just a case of changing the content of the various installations and displays to maximise the real and virtual journey. It's now the afternoon so my digital art playlist has changed the mood on all my displays at home. A quick check of my phone- David Hockney has sent me some flowers he's drawn on his iPad... quite late in the day for him, he usually sends first thing in the morning... so I send him a digital sketch of a broken clock as thanks back using PicsArt...

## Summary: A vision for the future?

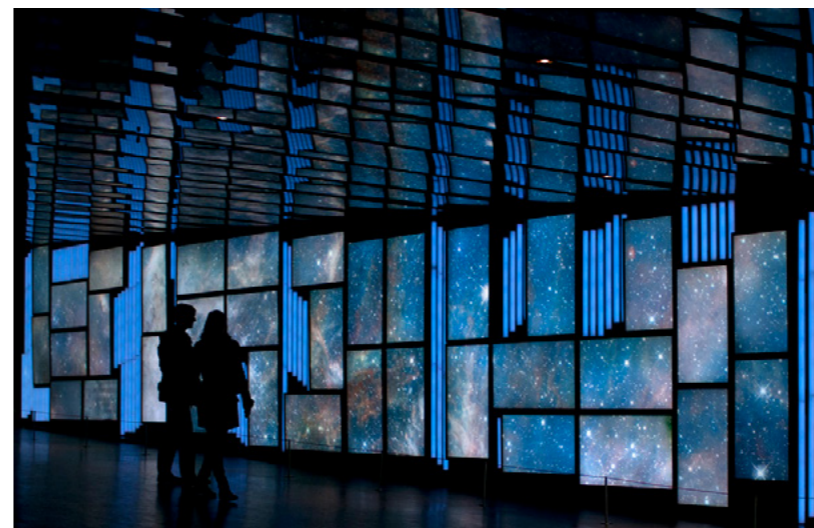
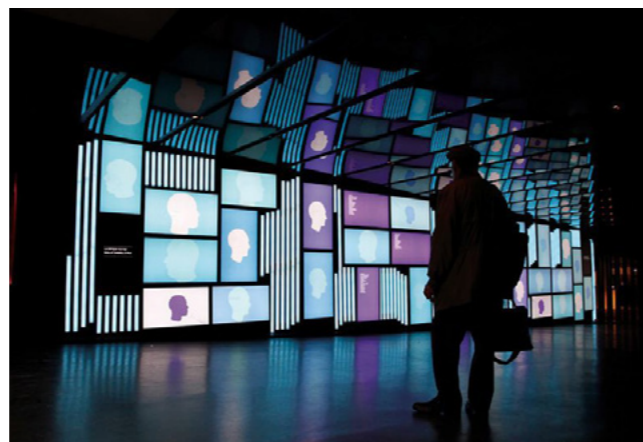
In our humble opinion, this future day for a digital artist is not too far away:

Upon waking up I immediately look up to see new pieces of art on my digital displays around the room. My virtual personal assistant knows my girlfriend has stayed over so it chooses the art based on her preferences. We both like one of the digital pieces so decide to purchase a digital limited edition (proven by block chain) using voice control. My creative day starts by me designing a new moving image artwork with mixture of my own creativity, along with an AI algorithm that has learnt my style and can build on my signature format.

I purposefully create art on an iPad now, using blockchain to ensure I own the intellectual property and the origins of my art can be traced back to me (and enabling me to collect royalties).

I make sure my collection going into a physical museum is integrated with VR so that not just those visiting the museum can experience my art. I love the fact anyone in the world can virtually walk around my exhibition in the comfort of their own home. In fact, they can often have a richer experience in terms of being able to see more of the background behind my creativity – I have created content to accompany my favourite pieces and provide more storytelling and context. I would have loved to have seen the thought processes behind past masterpieces. Now my musings are there for the world to see and interpret.

I personally send out 500 handwritten invitations to my online communities that finan-



## 02 Creating Art

*“Nowadays an artist is more interested in buying a high-end display and a drawing tablet rather than a canvas and paints...”*

### Pixels Replace Paint

If you asked the person on the street anywhere in the world about art, they would be deeply anchored to the primary idea of art as a canvas created with paint and brush. However, the future for art and the artist is inevitably digital. All creative fields – music, literature and so on – are being disrupted by technology. And art is no different. A recent watershed moment in British art, for example, has undoubtedly been David Hockney – one of the most influential British artists of the 20th century – embracing technology. In his 70s and still evolving as an artist, Hockney was inspired by technology and started drawing on his iPhone, before moving over to an iPad two years later.

*“I just happen to be an artist who uses the iPad. I’m not an iPad artist. It’s just a medium. But I am aware of the revolutionary aspects of it, and its implications.”*

**David Hockney**

David Hockney’s iPad entered his artistic toolkit<sup>1</sup> because it happened to fit into the pocket for sketchbooks he has long had sewn into his jackets. Now we



1 <https://www.telegraph.co.uk/culture/art/art-features/8066839/David-Hockneys-iPad-art.html>  
2 <https://www.fifteendesign.co.uk/blog/the-future-of-fine-art-david-hockneys-ipad-canvas/>



are all carrying the potential to have such ‘sketchpads’, thanks to touchscreen technology featured on smartphones and tablets. With over 3.3 billion smartphones in the world today, we all have the potential to create – and then share – our own art instantly.

*“I draw flowers every day on my iPhone and send them to my friends, so they get fresh flowers every morning. And my flowers last. Not only can I draw them as if in a little sketchbook, I can also then send them to 15 or 20 people who then get them that morning when they wake up.”*

**David Hockney**

Now in his 80s, Hockney designed a stained-glass window for Westminster Abbey that was installed in late 2018 – an iconic moment in art. Commissioned to create a scene that honoured the reign of Queen Elizabeth II, he designed the entire work on his trusty iPad<sup>2</sup>. was a natural thing to use because it was backlit, like a window.

Pixel-based art is indisputably still art – it’s just a new form of it. Even in an always-evolving industry, artistic talent will always have value, however the art is delivered.

*“Nowadays an artist is more interested in buying a high-end display and a drawing tablet rather than a canvas and paints... For many, the debate is not if pixels will replace paint, but when.”*

**Art Acacia, on Medium**

## The rise of digital art

Digital art involves the creation of pieces that are computer generated, scanned or drawn using a tablet or mouse.

Digital art has redefined the way art is made, displayed, experienced and sold. Digital artists employ computer hardware and digital tools throughout the whole artistic process, from the creation of the work to its display to a digitally based audience. They produce a variety of non-traditional media artworks, such as films, video projections, virtual reality environments and computer-generated images, whether bi-dimensional or 3D, still or animated.

Digital art will continue becoming [more and more interactive](#)<sup>1</sup>, allowing the audience to influence the images that artists create.

Many modern artists use their talents to predict, explore and even shape our future. They do so not just through visual arts, but also through music, movement, sculpture and even multimedia. Art is a powerful tool for imagining potential future worlds, and it is becoming ever more immersive through technology. But we have never before seen [such potent interactions between art and technology](#)<sup>2</sup> as we are seeing today, where each influences the other:

“While artists can shape the future of technology and human progress, technology can shape how artists express themselves.”

Bidshahri, Founder and CEO, [Awecademy](#)<sup>3</sup>  
(speaking at Google’s Singularity Hub)

Beyond the shift from paint to pixels, there is also astonishing progress in new, more attractive and



tougher materials that artists can work with. These innovations are expanding the horizons of creativity and opening up new artistic frontiers. They also allow contemporary artists to reduce the time spent in actual execution to a minimum, thereby freeing them to focus more on contemplation, creativity and developing ground-breaking ideas, as well as on sound preparation for their artwork.

Traditional artists face high costs for the likes of paint, canvas, clay or film. Of course, digital artists also have expenses, such as software subscriptions and computers/tablets, not to mention the time spent on [learning curves for new tools](#)<sup>4</sup>. However, accelerating advances in software and computing power mean many more artists will be able to afford such new tools over the next 10 years, enabling [much greater achievements in digital artwork, design and filmmaking](#)<sup>5</sup>.

“Most artists use technology in their everyday lives for research, storage, communication... and increasing numbers make much of their work with digital technologies such as video, sound, photography, net art, VR, AR, blockchain. Artists see the technologies as equal mediums to store, oil paint and canvas – it is simply a means to an end, a process by which to make art.”

David Gryn, Founder/Director, [Daata Editions](#)

1 <https://www.artworkarchive.com/blog/a-deep-look-at-digital-art-and-social-media>  
2 <https://www.google.co.uk/amp/s/singularityhub.com/2017/10/03/how-artists-are-using-tech-to-shape-the-future/amp/>  
3 [www.awecademy.org](http://www.awecademy.org)  
4 <http://www.midanmasr.com/en/article.aspx?articleID=200>  
5 <https://www.artworkarchive.com/blog/a-deep-look-at-digital-art-and-social-media>

## Supporting digital artists is becoming big business

Most art world processes involve risk taking, chiefly by the artists. And then they only receive rewards or returns based on sales, which are never secure or assured. Technology, however, has led to new platforms that invest in artists or enable their followers to help them get paid. One example of such investing in artists is [Daata Editions](#)<sup>1</sup>.

Daata Editions is an online commissioning, viewing and sales platform for artists working with digital media. It features over 430 artworks by more than 85 artists. Launched in 2015, the service has sold to major collectors, art collections and museums, and has exhibited in museums, art fairs and galleries all over the world.

This year, it is collaborating with Phillips Auctions, the Museum of Contemporary Art Detroit, The Bass Museum of Art in Miami Beach and many other entities to commission and exhibit new artists working in the digital domain.

The founders behind Daata Editions are David Gryn, digital art curator and former film and sound curator at Art Basel Miami Beach, and Anita Zabłudowicz, a leading art collector and philanthropist. They established the organisation primarily to help nurture, empower and support artists working with new technologies and to encourage the marketplace to take action.

According to Gryn:

“Daata’s strength is the understanding, and the primary support, of the artist and their place in the art world”

The Daata Editions model ensures

a commitment to artists using new technologies to create their works. It commissions the work, pays artists and shares royalties on all sales with them – a vital and necessary process.

Another model can be seen in [Patreon](#)<sup>2</sup>, a membership platform that makes it easy for creators and artists to get paid. As the site says: “Create on your own terms”. Patreon has over 100,000 creators earning salaries from two million monthly followers. The platform provides business tools for creators to run a subscription content service, with ways for artists to build relationships and provide exclusive experiences to their subscribers, or ‘patrons’. This is big business.

In January this year, Patreon said it expected to process more than [\\$500 million in payments in 2019](#)<sup>3</sup>.

That would put the company’s



1 <http://daata-editions.com/>  
2 <https://www.patreon.com/>  
3 <https://blog.patreon.com/millions-and-billions-celebrating-patrons-creators-major-milestones>

2019 revenue from its core platform north of \$50 million, given the 10 percent cut it takes from transactions.

Patreon recently raised [\\$60 million in funding](https://patreonhq.com/new-round-funding-816d5a592477)<sup>4</sup>, led by Chris Paik at Thrive Capital, which also led its Series B financing round. Venture Capital firms such as Index participated in the round, which valued the start-up at around \$450 million. Other investors include existing investors CRV and Freestyle, plus new backer Draper Fisher Jurvetson, via partner Barry Schuler.

The future is promising for independent artists and content creators (Patreon's main type of artist on the platform). It's encouraging for those building engaged, passionate fanbases and provides a way for them to monetise their superfans. Such models allow them to focus on creating, rather than on looking for their next pay cheque. Commercial models like these – created by technology and enabling creators to build a following – will become more and more prevalent in the future.

## Why support artists?

(Explained by David Gryn  
Daata Edition Founder / Director)

“The notion and logic of investment in artists is about nurturing talent and a commitment to the potential of what may yet come.

You aren't really hedging your bets when you support an artist, if the support is genuine, understanding and true. If all you want a quick return, the arts are not the right place for you. But history is on the side of educated investments having returns far greater than just money. The arts enhance and improve the quality of our lives.

Genuine artists do not go into their profession based on expected returns. In choosing their path, they commit to creating something that uplifts, excites, saddens or informs us all. Great artworks touch us – just as the past's great music, theatre, literature

<sup>4</sup> <https://patreonhq.com/new-round-funding-816d5a592477>

and even religion served the function of uplifting the soul.

*“We have most people using digital media as their natural language. Most artists, as indeed most of us, use digital media in every aspect of our life and work.”*

**David Gryn, Daata Editions**

The quality and cost of technology has made it possible for great works to be made and displayed at nominal cost. And there are more platforms than ever for showcasing such works.

Art made in the digital realm is often equated with dot-com-era investments – the thinking goes that, with anything digital, there may be a chance for great returns and, for companies created to manage the art process, exponential growth. But this mindset obfuscates what is most essential with any art process, and that is first and foremost paying, supporting and nurturing artists.

Artists will always keep making art. But the conditions in which they do so are always difficult, especially in terms of having the means to do so. Through either investment or philanthropy, we can support artists – providing the funds to make art, purchasing artworks (via galleries, art fairs, etc.) and communicating and sharing with others the importance of such support. This demands passion and commitment. But you will be deeply rewarded, time and time again.”



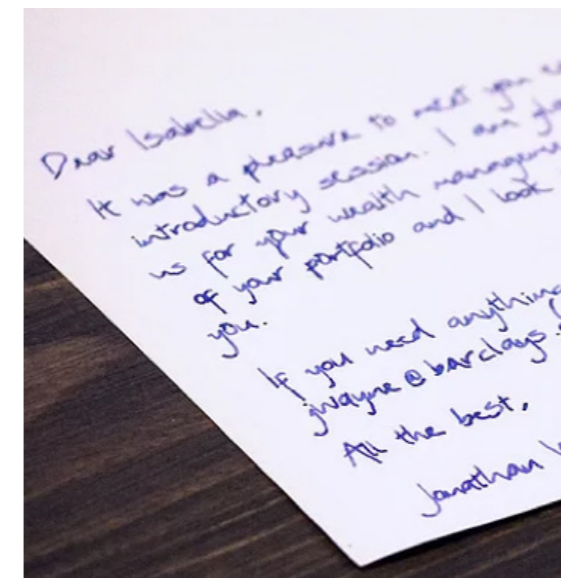
## Created by algorithms

Art has proven to be a perfect field for experimenting with AI and looking for ways to increase artists' creativity by replacing some of their process with algorithms or software-assisted technologies. AI-assisted art is spreading around the world, thanks to artists such as Mario Klingemann, Anna Rindler, Robbie Barrat and others.

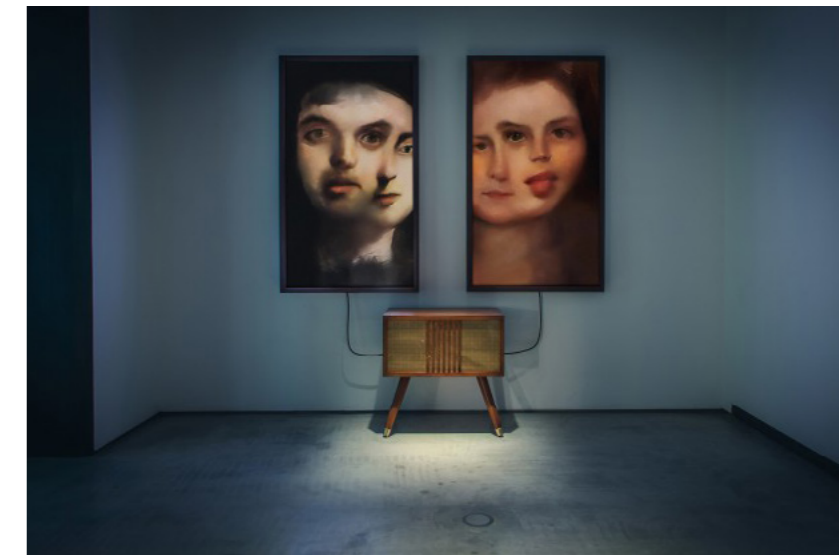
In a recent auction at Christie's, an AI-assisted artwork was sold for \$432,500. This opens a debate over whether such artworks can be considered art at all. The AI-assisted print was made using a form of machine learning called Generative Adversarial Network (GAN).

*“* In a recent auction at Christie's, an AI-assisted artwork was sold for \$432,500<sup>1</sup>.

GANs analyse tens of thousands of images and learn from their features. They are trained with the aim of creating new images that are undistinguishable from the original source. These networks are also able to reproduce the notion of novelty – the algorithm will create different results with the same initial inputs. In this way, GANs resemble human creativity.



<sup>1</sup> <https://www.nytimes.com/2018/10/25/arts/design/ai-art-sold-christies.html>  
<sup>2</sup> <http://thehandwriting.company/>



AI is a new tool that allows artists to maximise human creativity, automating part of the artistic process while maintaining control over other parts. Some see it as a new form of art, while others see it as a new tool for artists. What is clear, though, is that artificial intelligence and machine learning are evolving rapidly and are increasingly integrated into everyday life. And they will certainly impact the world of art as much as any other part of life.

Robotics and AI are also being used for handwriting and calligraphy. [The Handwriting Company](http://thehandwriting.company/)<sup>2</sup>, led by Robert Van Den Bergh and Alex Robinson, have developed software that can learn to mimic handwriting from a picture or a small sample, replicating anyone's writing style.

The company uses artificial intelligence, geometric distribution algorithms, robotics and printing technology to learn and recreate anyone's handwriting. Its system can learn and recreate handwriting, so it is as fundamentally unique and variable as a human's writing. The robotics and printing technology then recreate every stroke with varying pen pressure and ink distribution, making a letter indiscernible from one you might have written yourself.

Handwriting, like calligraphy, is a form of art. In some cases, it can take years – even lifetimes – to master. And, just as with paintings, every piece of handwrit-

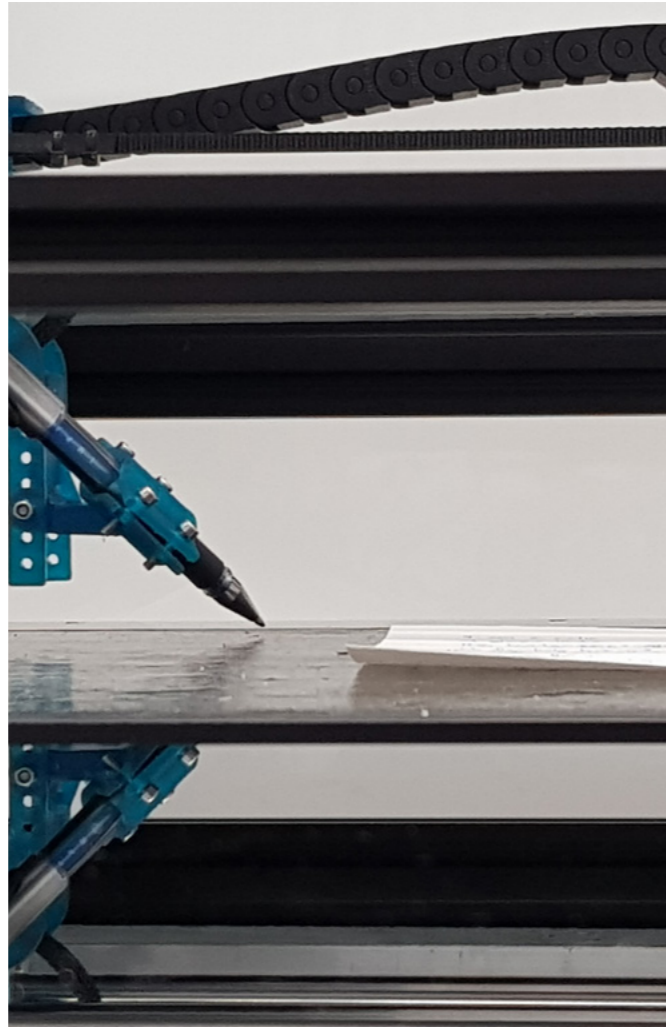
ing and calligraphy is beautifully unique and personal to each individual creating it. As the [V&A has noted](#)<sup>3</sup>, calligraphy in the Islamic (and Eastern) world in particular is valued as art, much more so than in the western world: “The genius of Islamic calligraphy lies not only in the endless creativity and versatility, but also in the balance struck by calligraphers between transmitting a text and expressing its meaning through a formal aesthetic code.”

Whether it's a poem, a song or a piece of religious text, something that's handwritten can convey a unique and artistic message in a way few other forms of communication can. In the case of poets such as Sylvia Plath, the way in which poems are written becomes part of the piece of art, adding new dimensions and layers to it<sup>4</sup>. It can reflect both the artist's mental state and artistic flair while writing – something that digital communications, and arguably even the voice, cannot. It is timeless, incredibly traditional and something that is accessible to almost anybody in the world.

One day, you will be able to dictate a letter to your virtual personal assistant that can be written in your handwriting, with the same amount of pressure you would apply to the pen, in real ink on paper. This has obvious applications in business – for example, companies can send customers 'handwritten' sales and marketing messages, demonstrating there is a human on the other side who values them. Whether for an apology note, a lead generation letter, a fundraising message or a follow-up letter, companies are increasingly moving away from digital forms of communication to improve engagement. Experiments have used AI to predict what the likes of Sylvia Plath or Shakespeare might have written next, based on learning their writing style. Then the work can be written out onto paper in their handwriting to add an extra layer to the output.

<sup>3</sup> <http://www.vam.ac.uk/content/articles/c/calligraphy-in-islamic-art/>

<sup>4</sup> [Example Sylvia handwriting click here.](#)



## 3D printing

In recent years, we have seen growing experimentation with and technical advances in 3D printing. After the initial excitement of an [emerging technology hype cycle](#)<sup>1</sup>, we now appear to be moving into the 'slope of enlightenment', with more [applications of 3D](#)<sup>2</sup> printing becoming mainstream in the art world.

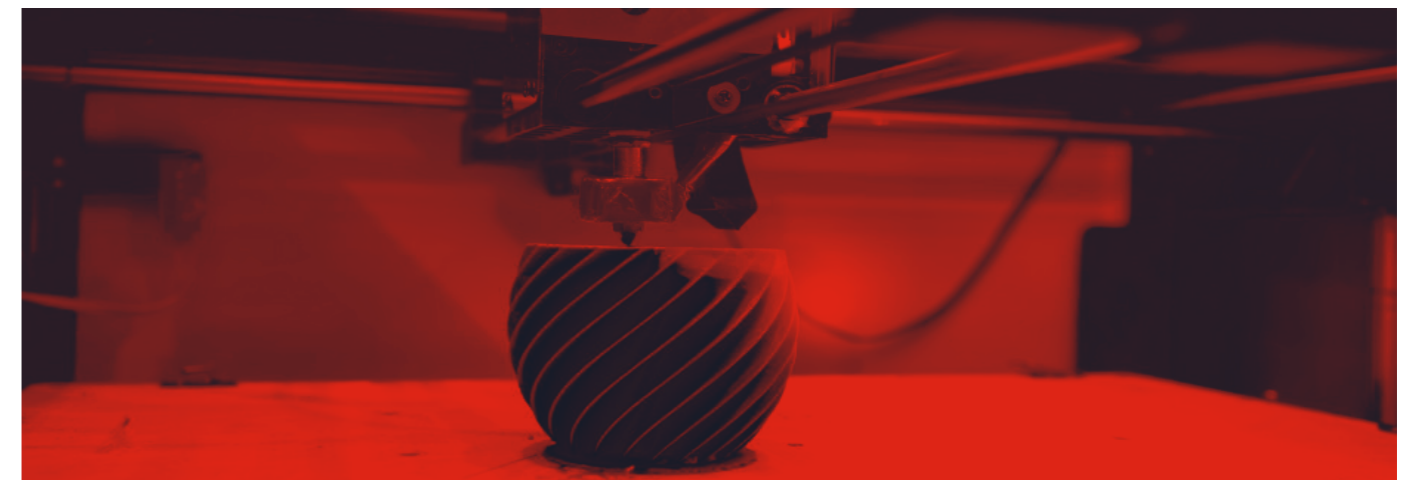
3D printing makes it possible to produce extremely accurate, digitally fabricated replicas, using the high-tech laser scanners. The power of such replicas lies in their digital nature, which enables them to be easily stored, edited and shared across the world.

*“The use of 3D printing has opened new doors to visualise and create the unimaginable.”*

**Amy Karle, artist**

In the future, when you see a sculpture you like, you will be able to go online, buy the digital blueprint, then print it in your own home. This has the potential to democratise the manufacture of artistic goods.

Advances in 3D printing will enable museums to create entire installations, taking, for example, works such as Benjamin Dillenburger and Michael Hansmeyer's [‘Digital Grotesque’](#)<sup>3</sup> to the next level. The



- <sup>1</sup> <https://www.gartner.com/smarterwithgartner/5-trends-emerge-in-gartner-hype-cycle-for-emerging-technologies-2018/>
- <sup>2</sup> <https://www.independent.co.uk/arts-entertainment/3d-printing-art-sculpture-medium-replicas-copy-a8852661.html>
- <sup>3</sup> <https://interestingengineering.com/these-8-artists-are-3d-printing-masterpieces>
- <sup>4</sup> <https://www.3dnatives.com/en/3d-printing-in-art-evolution-of-creation-260920184/>
- <sup>5</sup> <https://ariustechnology.com/>
- <sup>6</sup> <https://3dprintingindustry.com/news/3d-printing-part-eps-14-9-billion-2025-revenue-strategy-123970/>

boundaries of engineering and computation, and the [fabrication of architectural forms](#)<sup>4</sup>, will become blurred or cross-pollinated.

[Arius Technology](#)<sup>5</sup> is a fast moving, privately held company from Vancouver that has really advanced laser-based optical scanning for printing and digitisation of art. They aim to have the most sophisticated data capture technology available in the art world. The technology accurately, simultaneously, capture each pixel in the surface geometry and colour of art objects. Arius have collaborated with world-class art institutions such as Tate Britain and the National Gallery of Canada, digitizing priceless masterpieces (by the likes of Vincent Van Gogh and Claude Monet). They have 3D printed the Girl with a Pearl Earring for The Mauritshuis. The future is a new level in rich reprographic technology to preserve the world's greatest artworks, with elevated prints providing a more authentic experience by capturing the depth, texture and colour an artist like Vermeer's brushstrokes.

As more corporate players focus on robotics, AR and AI within 3D printing, ever more capabilities will open up to artists. Japan's Epson, for example, plans to [move into 3D printing](#)<sup>6</sup> as part of its Vision 2025 strategy to grow sales revenue by 50 per cent. And as the 3D printing industry grows, so too will its applications to art.



## Mass creativity

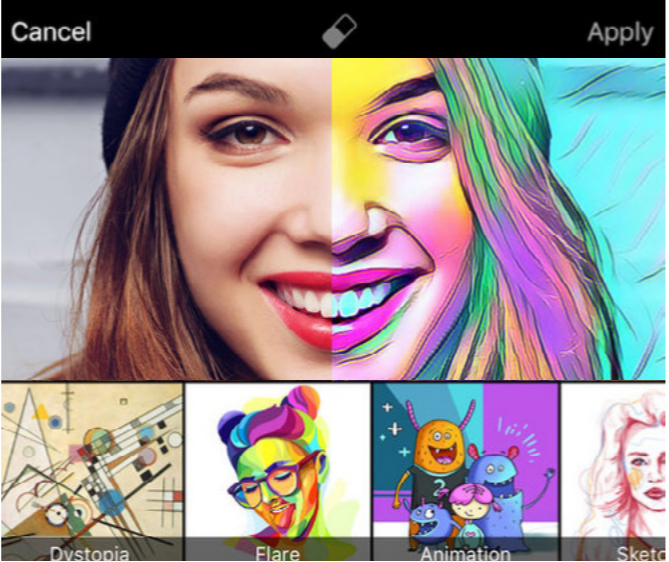
Art should not just be for the highbrow, full-time creators or avid collectors. Creativity can be mainstream. And technology can put creating at our fingertips. PicsArt<sup>1</sup>, for example, is a social network and an application for image editing, collage and drawing. Powered by more than 130 million monthly active creators (and with an install base of over 600 million), PicsArt is the world's largest creative app and platform. Every month, the PicsArt community creates, remixes and shares nearly one billion images and videos, making it the largest open-source collection of #FreeToEdit content in the world. PicsArt is available in 30 languages as a subscription on iOS, Android and Windows devices. The company is headquartered in San Francisco, with offices in Yerevan, Armenia, Los Angeles and Beijing. It also has an AI lab in Moscow.

PicsArt makes it easy for people to tap into their inner artist. CEO and co-founder Hovhannes Avoyan started the company in 2011 when his then-10-year-old daughter shared her artwork online, only to see her bullied by critical comments. Hovhannes was appalled that people were so critical about something so subjective and it inspired him to start exploring photo-editing tools and platforms with a community element. His goal was to build a safe space where anyone could share photos, images and other artworks without judgment, and collaborate in meaningful ways using built-in tools that would unleash their imagination.

The problem PicsArt solves is simple, according to Avoyan:

“The mobile-native generation communicates visually. They're eager to go beyond the filter, while at the same time not wanting to learn complex editing software to do it.”

Until recently, the ability to creatively manipulate photos, images or videos was limited to those who knew how to use – and could afford – Adobe Photoshop or



other complex editing programs. Today, new mobile technology allows anyone to do this easily.

Hovhannes says AI is becoming more and more common in the sector. PicsArt's team relies on AI for user customisation and personalisation, as well as for creativity and content moderation. The company uses AI and image recognition for filtering and flagging inappropriate content, as well as for determining what content resonates with users. This enables it to surface content and art that is relevant to users based on their likes, preferences and edits, essentially democratising the creative process by showing all the tools, sources and assets used in a specific image.

AI is already making photo editing easier and quicker, and this trend will continue. This too will make art creation simpler and more digital. The future for PicsArt lies with a new product called Replay. It shows users the entire image-editing process from start to finish, allowing anyone to replicate those edits on their own images with just a few taps. The result is quick professional edits that take a fifth of the time to create. Replay makes editing easier and faster, and kick-starts learning for new and/or novice users. It also gives creators a way to find and collaborate with like-minded creators.

Hovhannes notes that today's users are also mobile and want to create, edit and share on the go. And the platforms that enable limitless creativity from the palm of one's hands<sup>2</sup> with no training required, will be the ones that prevail.

## 03 Enjoying Art

*“What a museum or gallery will look like inside and out, in say 2039 after 20 years of innovations, will be a world away from where we are today. And that's exciting”*

1 <https://picsart.com/?hl=en>

2 <https://www.fastcompany.com/3008477/finding-art-building-business>

We start this section looking at a place where people have for centuries discovered and enjoyed art: museums and galleries.

**Vastari**<sup>1</sup> is the largest marketplace for exhibition loans and tours, and a global, interdisciplinary, tech-enabled player in this space. The platform is used by professionals from the top most visited museums, as well as museum professionals worldwide and over 1,000 private collectors. The founders believe that the art world needs a counterbalance to the auction and sales market, a more transparent exhibition hiring fee ecosystem and more transparency in the way content is chosen for museum shows.

According to a study by Vastari, there are an estimated 55,000–80,000 museums and galleries around the world with over 140,000 exhibitions held each year. Of these, 75 per cent involve hosting content either as a ready-made show or as loans from external institutions. The estimated overall value of exhibited works at temporary museums alone every year is \$180 billion.

Despite the large value of exhibits, art museums and galleries around the world face major challenges. Most have tight budgets with which to attract as many visitors as they can. But these institutions find it especially tough to meet the expectations of younger generations. Digital natives relate to the art market in a different way, because technology and the internet allow audiences to consume every form of creative content from enormous databases without physical restrictions.

Two challenges in particular confront museum and gallery owners and curators today: Embracing digital tools to make experiences more interactive, accessible, engaging and scalable, and displaying more digital art. While it has contributed to such challenges, technology could also provide solutions.

1 <https://www.vastari.com>



## Embracing digital tools: Making the invisible visible

According to Jan Laessig, founder of **muzeeo**<sup>1</sup>, attracting visitors – especially younger ones – is crucial, but no easy task given museums are “competing with a world full of possibilities to spend one’s leisure time”.

While digital technologies are still rather skeptically received by the cultural world, Laessig says they could be a major factor in bringing museums to the next level.

Bernadine Bröcker Wieder, CEO of Vastari, notes that, until recently, when you spoke about digital tools in museums, the focus was on interactive displays, audio guides and collection management systems. These were the first ways in which technology seeped into the museum ecosystem. But such tools were simply emulating offline systems online. Audio guides and interactive displays often lacked in-depth content, or were completely disconnected from the overall museum experience, as those who produced them had little specialist knowledge about the subjects being discussed.

However, Bröcker Wieder says, things today are changing:

*“As museum professionals become more tech-savvy, the technology has become more reliable, and the benefits of tech are more and more clear, the way technology works in museums*

1 <https://muzeeo.com/>



*is changing. And it is bound to fundamentally change what we think of as a ‘museum’.”*

The first technology to have a major impact was cloud computing. Collection management systems no longer needed to be hosted on local servers. The infrastructure for websites could now scale up or down depending on usage. Search engines could be built on the cloud using open-source resources. And incumbent providers were disrupted by younger companies like **Collector Systems**<sup>2</sup> and **Veevart**<sup>3</sup>. Eventually, existing systems like Adlib, Vernon, TMS and MuseumPlus also started offering solutions that were more flexible in price and scale. While many museums still ask for highly customised solutions that are clunky and difficult to navigate, this will change as more members of the community come to understand software-as-a-service (SaaS) principles.

The next trend was the change from audio-guide to entire applications dedicated to discovery and engagement, both within and outside the museum. From **Cuseum**<sup>4</sup> to **Gamar**<sup>5</sup> to **izi**<sup>6</sup>.Travel, new companies began helping museums leverage AI to build AR solutions, use machine vision to identify or categorise objects, employ chatbots to answer visitors’ questions and offer sophisticated educational games that also gather data to show how audiences of all ages interact with content. As a result of all these data-driven ventures, incumbent companies had to

2 <https://www.collectorsystems.com/>  
3 <https://veevart.com/>  
4 <https://cuseum.com/>  
5 <https://www.gamar.com/>  
6 <https://www.izi.travel/>

step up. And many now offer dashboards to analyse visitor behaviour, platforms to build proprietary content and bring-your-own-device applications.

While similar to sculptures in their 3D nature, digital installations offer a new typology in their relationship with viewers. These types of artworks are often interactive, responding to visitor inputs such as body movements, voice or touch. They can also be immersive, providing visitors with new spatial environments or altering the nature of their surroundings. AR and VR are typical examples of such technology experiences.

VR offers total immersion in a different reality. AR, meanwhile, shows reality and an altered version of reality. This means it can be useful for annotating scenes and providing extra information. It is also used to put scenes into context or to highlight contrasts with the current reality. VR requires dedicated technology, such as headsets, controllers and sensors. AR experiences need only a smartphone or tablet and can be downloaded as apps.

There are many ways in which museums and galleries can use these technologies. The simplest way is to use them to provide more information about artworks to exhibition visitors. But there is also the possibility of displaying digital versions of the artists next to their works. These 3D personas could even act as narrators, guiding visitors through the exhibition.

This engages visitors in new ways, and can capture people’s attention, keeping their focus on exhibitions for longer.



# Augmented reality in art education

Most of the biggest and most prominent institutions have already embraced such opportunities, and some have even experimented with [spatial computing](#)<sup>1</sup>. However, few museums have so far truly embraced the possibilities of AR<sup>2</sup>. If it is used at all, AR often serves as an alternative to QR codes: The recognition of a particular artwork triggers the display of additional information in a [mobile app](#)<sup>3</sup>, which disconnects the visitor from the physical work of art.

This is a missed opportunity, because AR offers a powerful means to create more engaging experiences for visitors. Instead of using written texts on walls, in leaflets or in multimedia guides, or providing the usual audio guides, museums could show relevant information in visual ways, directly next to or on the actual work of art.

Museums or galleries could, for example:

- Provide comparisons with other works by the same artist or by another artist of the same period.

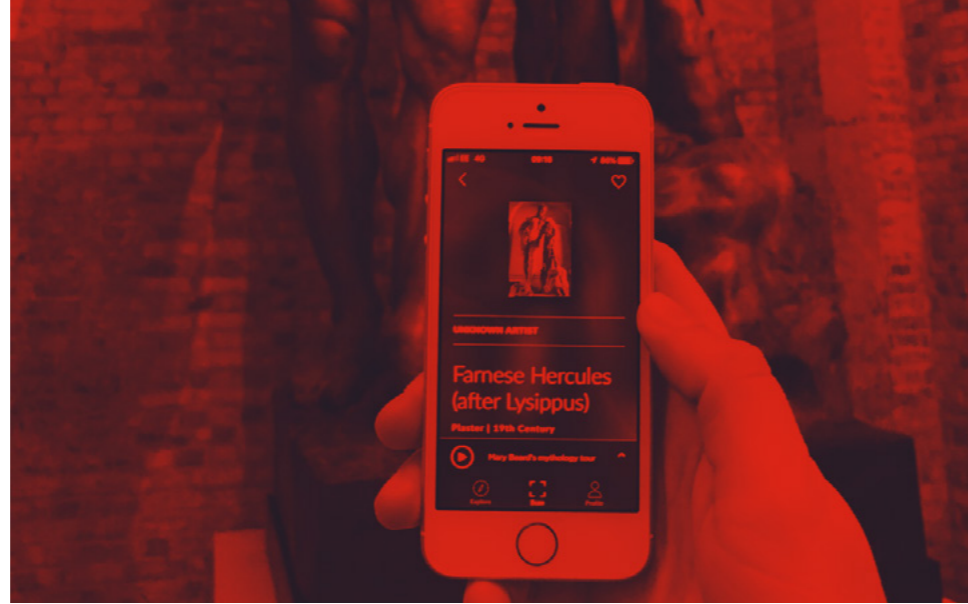
- Show previous sketches or drawings made by artists before they created a painting or sculpture, enabling visitors to see how the final version compares to earlier conceptions.
- Present several different versions of the same artwork that might appear in other museum collections around the world.
- Illustrate how some artworks were altered over time, in many cases via professional restoration.
- Offer 'then' and 'now' views of paintings that show particular perspectives of cities or landscapes.
- Highlight how artists were inspired by works of their predecessors and show the visual 'quotations' their pieces contain.

*Almost every artwork has a visual story worth telling through AR. It can make hidden 'secrets' visible in*

*simple, straightforward and sensual ways, directly on the artworks, even without the need for written text or spoken explanations.*

**Jan Laessig,**  
Founder of muzeeo

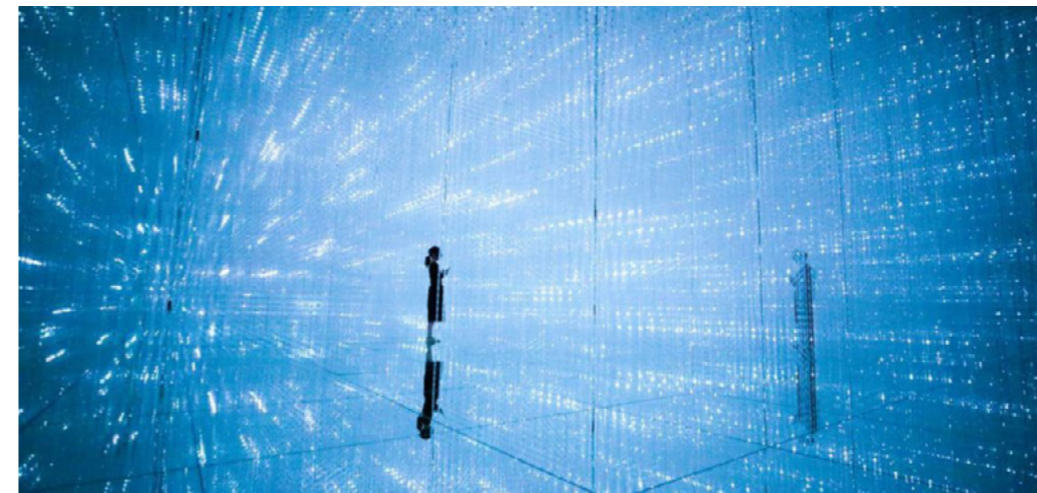
AR can also be used to 'play' with artworks. Imagine, for instance, a constructivist painting that turns into a machine and loses some of its elements – this could help viewers understand how the placement, size, form and colour of the elements did not come about by chance but were based on careful choices by the artist. It might help observers grasp the idea of constructivism much better than any words could do. Or imagine a ballet dancer in one Degas' paintings actually moving so viewers could understand her position in the context of the ballet's choreography. AR can be used in even bigger contexts. Exhibitions could, for example, be virtually enhanced with additional works that couldn't be shown, whether because the muse-



um couldn't afford the insurance fees to borrow them or because they simply weren't available. Works usually hidden in storage due to limited space could also be displayed. Combined with additional technologies, the selection of AR-enhanced works might even be personalised according to the preferences of individual visitors.

Using AR, art education could be turned into an engaging, entertaining and sustainable learning experience. In the future, devices such as the [HoloLens](#)<sup>4</sup> or [Magic Leap](#)<sup>5</sup> might make AR investments for museums almost unavoidable. While it might be a few years before these devices are mature enough for such uses, there's no need to wait. Smartphones and tablets today can already be used for intriguing AR experiences such as those being rolled out by the likes of muzeeo.

*"In theory, you could access these works from the comfort of your own home. What is the role of the physical space*



- 4 <https://www.microsoft.com/en-us/hololens>
- 5 <https://www.magicleap.com/>



*as a context for a virtual reality work?"*

**Bernadine Bröcker Wieder,**  
CEO, Vastari

Ironically, the slow processes that currently exist in museums are inhibiting the adoption of these new technologies. Once museums are truly digitised, once tech knowledge is expected for any museum professional, and once these systems are reliable and widespread, expect to see real digital innovation take hold.

Vastari CEO Bröcker Wieder predicts that, "once the resolution increases and cost of production decreases, VR will play a huge

role in the art world".

"It will help transport viewers into exhibitions for a more 'true-to-life' experience in front of an object *and* enable potential buyers to simulate objects for sale at a gallery in their own home. This advancement in tech will be a welcome relief to galleries suffering from increasing exhibition and rent costs. As a result, we will see more galleries turning to online-only 'premises' with only physical appearances at the major art fairs," she adds.

*"What a museum or gallery will look like, inside and out, in say 2039 after 20 years of these innovations, will be a world away from what they are today. And that's exciting."*

**Bernadine Bröcker Wieder,**  
CEO, Vastari

1 <https://medium.com/@victoragulhon/what-is-spatial-computing-777fae84a499>

2 Note MR is also a significant aspect of immersive experiences, but for the purposes of this report the focus is only on AR and VR

3 <https://www.staedelmuseum.de/en/offerings/app-offers>

## Displaying more digital art

At the Venice Biennale, the crowds thronged into rooms with video and digital projects. However, as Daata Editions' David Gryn notes: "If you go to the major art fairs, such as Art Basel or Frieze, you see almost no video or digital artworks."

Why is this? The art world is conservative and has until now resisted art created with digital technology. The disconnect between this and the reality of what is being made and shown in leading museums is striking. For galleries, the cost of sale is too great and the risk too high. Galleries and auction houses know how to sell object-based art. But when it comes to art made with the help of digital technology, they lose confidence and shroud their processes with questions and layers of complexity.

Technology hardware in art exhibitions can be expensive and delicate. Yet it can be simple too: "My tendency is to use the ready-made screens, iPads, projectors, sound systems, cinema – that works robustly for TV, film, music and concert viewing and listening," says Gryn. "Daata has exhibitions worldwide often by just sending digital files via the internet, and the host venue has the equipment already to play the works. There is no shipping cost, no postage and [it's] simple to plug and play."

As more digital art is created, expect to see the rise of dedicated digital art museums. Japan's Mori Building Digital Art Museum has over 10,000 square meters of exhibition space. The digital art collective



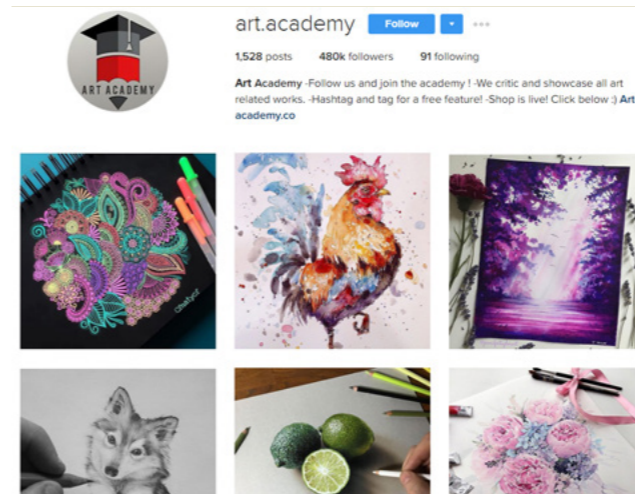
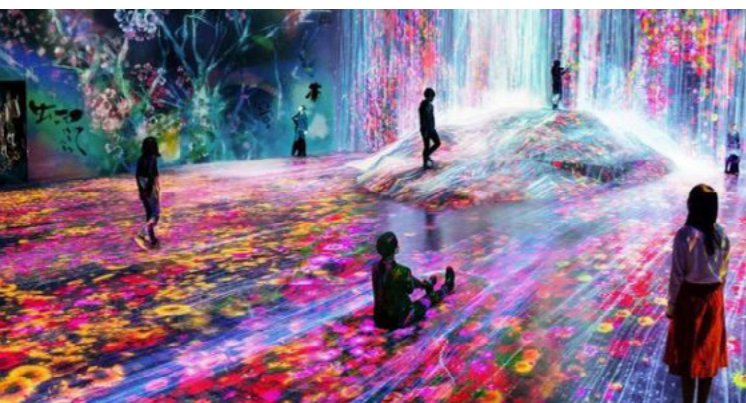
**teamLab**<sup>1</sup> – an interdisciplinary group of artists, scientists and others – has had multiple exhibitions around and beyond Japan over the past few years. Despite its Japanese roots, however, it was only in 2018 that it finally launched permanent (or, at least, long-term) installations in Japan. Building Digital Art Museum: **teamLab Borderless**<sup>2</sup> – billed as the world's first digital art museum – was unveiled near Tokyo in June 2018 with much fanfare. Since opening, teamLab has built many of the most interactive and photographed digital art installations ever. The building has around 50 installations that generate imagery thanks to 520 computers, 470 projectors and countless motion sensors.

*"When you create something, there are already boundaries. If you make it on canvas, there are boundaries; if you make a sculpture, you can't change it. But for digital (art), you can always change, because the digital world doesn't really exist."*

**Takashi Kudo, communications director, teamLab**

One thing that is striking about the new wave of digital art museums is the rich imagery they create and promote to a wider audience. If we agree that the challenge for museums is to reach a wider audience, creating installations that are inherently 'Instagramable' and shareable will be key to their success. Increased megapixel counts and improved functionality, alongside the smartphone market's 5G evolution, will help drive such photo or video sharing capabilities and encourage museums to create visually impactful scenes that entice attendees to capture, share and spread the word.

1 <https://www.teamlab.art/>  
2 <https://borderless.teamlab.art/>



## Sharing and discovering

Up until recently, social media was a digital tool for museums but often only as the digital extension of the marketing team, according to Vastari CEO Bernadine Bröcker Wieder. Social media posts were frequently written by younger staff members, and engaging with the public in such ways was sometimes looked down on by the curatorial departments. The medium tended to be viewed as a low level of communication primarily "for the kids".

According to the 2017 **Hiscox Art Trade Report**<sup>1</sup>, 91 per cent of galleries surveyed actively use social media as a promotional tool for their business, and for the artists and art they exhibit. In a follow up study in 2019, Hiscox found that Instagram continues to be the art world's most favoured social media platform, with 65 per cent of survey respondents choosing it as their preferred social media for art-related purposes, up from 63 per cent in 2018. It's clear that the consumption of art is **broadening outside of traditional media**<sup>2</sup>.

Social media is having an impact in the art world. **According to a recent report**<sup>3</sup>, 79 per cent of art buyers under 35 use Instagram to discover new artists, while 82 per cent use it to keep up to date with artists they are already familiar with. Overall, 43 per cent

1 <https://www.hiscox.co.uk/online-art-trade-report/>  
2 <https://www.artworkarchive.com/blog/a-deep-look-at-digital-art-and-social-media>  
3 <https://arttactic.com/editorial/millennials-shape-future-online-art-market/>



of Gen-Y buyers reported being influenced by social media when buying art. The data indicates that social media will have a major effect on how artists promote their works.

Artists can profit from the use of social media because they can go directly to their audience, developing discussions with followers and opening up new channels of sale. Artists using social media also don't need to rely solely on art galleries for validation of their success. Instagram itself has become a personal art gallery where fans become critics and collectors. And artists can use social media to help finance their art projects and enlist fans to spread the word and help their works go viral (as explained in Section 2 of this report).

Sharing art can provide social signals of acceptance, sending messages such as: "I like this artist and I post a picture of it on my social networks", or "This social movement has brought an important democratisation of access to art".

For art at all levels, this can become a self-perpetuating phenomenon: the more people share art, the more others will discover it and become engaged.

One more tool developed since the mass adoption of smartphones are art discovery apps. Leading the

### 03 | Enjoying Art

way is [Smartify](https://smartify.org/)<sup>4</sup>. It's a free app that allows users to scan and identify artworks, access interpretation and build a personal art collection in some of the world's best museums and galleries.

Smartify has been described as the 'Shazam and Spotify of Art'. Those who love music will be familiar with [Shazam](https://www.shazam.com/)<sup>5</sup> – it's one of the world's most popular apps, used by more than 100 million people each month to identify music, find song lyrics and discover the music that artists themselves listen to. It was bought by Apple for \$400 million in 2017.

Smartify instantly identifies artworks (via image recognition technology) after users scan them on their smartphones. Users can then unlock the stories behind each artwork, create a digital personal art collection and share what they've found with the Smartify community. Its aim is to help people make meaningful connections with art. Smartify is available at a growing network of partner venues, including some of the world's most popular museums such as The National Gallery, The Royal Academy of Art, the Smithsonian Museums and The State Hermitage Museum.

According to BBC Arts Editor Will Gompertz: "Smartify is the most elegant, unobtrusive, information-rich

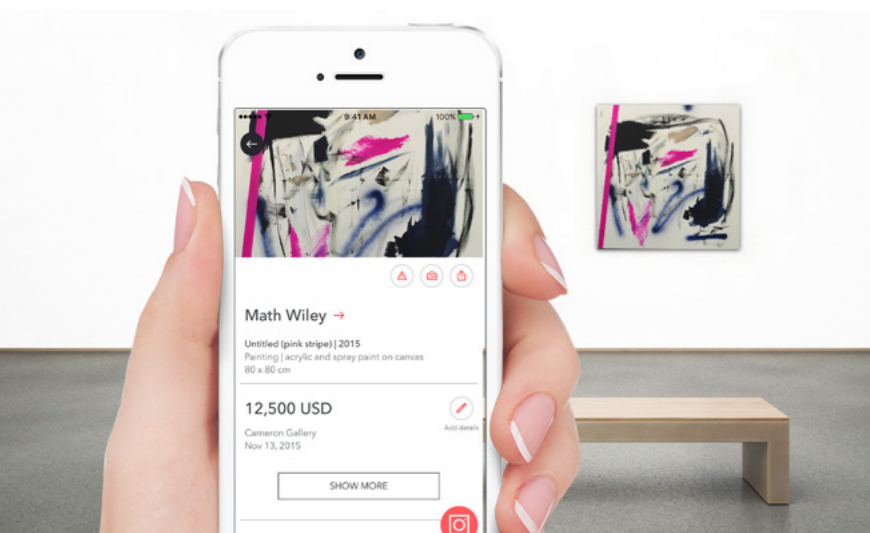


gallery guide I've seen. And it's free!"

There are other such tools as well. Magnus, for example, uses the image recognition software developed by wine-recognition app [Vivino](https://www.vivino.com/)<sup>6</sup> (featured in the London Technology Club's last report about the Future Technology in Wine) for art. Users can photograph an artwork, and the app will instantly provide information about the artist, title and price.

According to Magnus Resch, the New York-based founder, "this kind of technology will completely change the way business is done in the art market... empowering those who might be interested in buying art but don't know where to start".

There are currently 10 million pieces of artwork in [Magnus' database](#)<sup>7</sup> (it's the world's largest database for contemporary art). Twelve per cent of these are from the primary art market, and the rest come from publicly listed auctions. Magnus works in more than 20,000 galleries. In 2018, [Leonardo DiCaprio became an investor in the platform](#)<sup>8</sup>. Resch said he gets the most emails from collectors who, like DiCaprio, are excited to see art become accessible for more people to enjoy.



4 <https://smartify.org/>

5 <https://www.shazam.com/>

6 <https://www.vivino.com/>

7 <https://www.businessinsider.com/magnus-app-is-like-shazam-for-art-2016-5?r=US&IR=T>

8 <https://www.vanityfair.com/style/2018/02/of-course-leonardo-dicaprio-invested-in-art-app-magnus?verso=true>

## 04 Collecting / Investing in Art

*"Something that in the past was just not feasible – now we can say that art in the future could belong to everybody"*

## Democratising ownership

According to a recent [UBS report](#)<sup>1</sup> yearly sales in global art market reached \$67.4 billion in 2018. Dealers accounted for 57 per cent of the transactions, with auctions accounting for 43 per cent. Transactions greater than \$1 million accounted for 50 per cent of the market (\$33.7 billion). According to Artopolie founder, Bruno Costa, it means the average investor is not financially capable of investing in fine art because of high prices.

It is commonly assumed that a piece of art is an object with unique attributes, original and irreplaceable. Artwork goes from the artist's studio to the gallery where it is acquired by a collector. The assumption is the same object trades hands, and it is then the collector that decides where it resides and who has access to it.



When considering how to collect digital art, according to David Gryn at Daata Editions, we come across two preconceptions: What an artwork must be and what digital files are worth.

Digital art allows us to own and at the same time share an artwork, not only its reproduction. This can raise some eyebrows and insecurities. It may be argued that if the artwork is available elsewhere or that it can be copied, it loses value.

A digital artwork that has been purchased from a reputable source with a valid registry of authenticity has a history of production that can be established from the artist to the collector. No matter how many copies of the artwork may circulate, only the collector – or collectors if the artwork is editioned – can claim ownership and, more importantly, [become part of the history of the artwork](#)<sup>2</sup>.

A number of platforms are utilising the latest technology to make it possible for small art investors and art-lovers on a budget to make investments, as well as increasing liquidity in fine art.



## Tokenisation: Making Fine Art a liquid asset

Digital art can only be valuable when its originality is certified, introducing the element of scarcity on artworks that are by nature replicable. Tokenisation allows digital artworks to be shared on a secure and transparent ledger that artists and art galleries can monetise easily. Tokenised digital artworks will be accessible only with dedicated private keys owned by the art owners. Every time a digital artwork is opened, a payment is released to the artist or art owner like royalties in the music industry.

In June 2019 Andy Warhol's KIKU (1984) became the first ever fully tokenized artwork that has been listed and proposed to small investors starting from just €1. It happened on ArtSquare.io, a blockchain native art-trading platform on a mission to making Fine Art a liquid asset.

ArtSquare (awarded at the Malta Blockchain Summit 2019 as the best A.I and Blockchain project 2019) employs tokenisation to make the fractional ownership of artworks possible for all budgets. At the core of the project is the digital listing of artworks (tokenization), which involves the virtual division of the artwork's value into multiple portions. This system of issuing portions of artworks relies on distributed ledger technology. DLT ensures fairness, security and

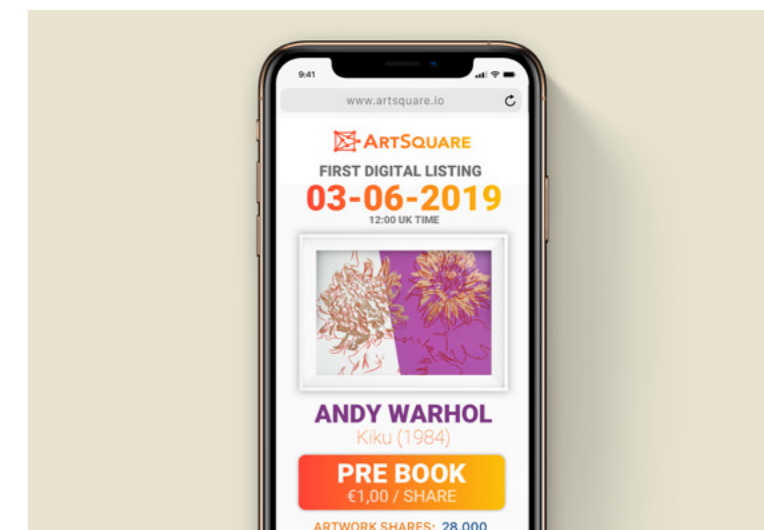
transparency in all transactions and exchange of Digital Art Shares (DASs) across the platform.

ArtSquare.io's goal is to give small and medium investors full freedom to access the art market. Thanks to the platform, art investors will be able to manage portions of artworks like shares of any other assets.

While buying an artwork through the traditional art market entails a considerable spend – which includes commission fees and maintenance costs – resulting in locked, illiquid assets in the long term, ArtSquare.io's system of issuing digital art shares for artworks allows investors to diversify the financial risk and enhance the potential for revenues from their portfolio.

The ArtSquare Primary Market is the place where art investors can go to buy portions of artworks in the form of digital art shares. ArtSquare.io gives owners extra freedom by allowing them to choose the currency they want to use at the moment of listing the artwork and creating tradable DASs. This will be the currency that characterises the exchange of DASs for their artworks.

Instead of investing a huge sum on a single, highly priced artwork or collectible, investors on ArtSquare.io build a portfolio of different digital art shares representing multiple artworks of various value. ArtSquare.io's Multi-Currency Wallet allows art investors to keep track of the value of their assets and make informed decisions on their DASs based on the trends and developments of the market.



1 [https://www.ubs.com/global/en/about\\_ubs/art/2019/art-basel.html](https://www.ubs.com/global/en/about_ubs/art/2019/art-basel.html)

2 <https://daata-editions.com/info/foreword/the-artwork-is-a-digital-file-yes>

On the Secondary Market, art investors can divest their DASs, invest in other art shares that grow faster, and give others in the community the chance to own an artwork they did not get the chance to invest in on the primary market.

*“Fine Art should be accessible to anyone. Thanks to the blockchain we are finally able to democratise access to it in a secure and transparent way”*

**Fabrizio D’Aloia,**  
CEO & Founder of ArtSquare.io

An alternative platform looking to democratise access to fine art as an investment is Artopolie. Founders Bruno and Victor Costa aim to add a new level of trust and transparency, allowing art to be available to be appreciated by everyone. Artopolie secures major artworks from world renowned artists such as Picasso. Each artwork is the centrepiece of a securities offering, filed with the US Securities and Exchange Commission (SEC).

Artopolie plans to create the means for investors to sell their securities through the Artopolie platform to other investors. In the meantime, Artopolie pays a dividend to investors based on the portion of the revenue generated from museums who pay to hold the art. You will be able to buy a small share in the art, from as little as \$50. Essentially art that was traditionally illiquid will now be easily fractionalised, bought and sold.



*“Eventually, anyone that wants to liquidate a fraction of their artwork will be able to do it”*

**Kim Randall Stephens, Director of Acquisitions and Sales, Maecenas**

“Thanks to the blockchain we are able to build a future where Fine Art will become one of the main asset classes. Tokenized artworks will be comparable to listed companies.” - Fabrizio D’Aloia, CEO & Founder of ArtSquare.io



## Distributed Ledger Technology

One key aspect of technological innovation that is important for many of the companies harnessing tokenisation (mentioned already in this report), art provenance and tackling counterfeiting is distributed ledger technology (DLT, aka Blockchain<sup>1</sup>). There are many companies focusing on blockchain, creating immutable records in a specific format for different use cases. [4Art Technologies<sup>2</sup>](https://www.4art-technologies.com/) is looking at insurance, [Artory<sup>3</sup>](https://www.artory.com/) is looking at sales records, [Codex<sup>4</sup>](https://www.codexprotocol.com/) is increasingly used by artists and then there is [Verisart<sup>5</sup>](https://www.verisart.com/).

At present, proving a piece’s provenance relies too heavily on trust, on outdated, paper-based systems and on single, authoritative bodies. As such, art fraud remains a major issue. At least

1 <https://www.forbes.com/sites/elenezavelev/2018/10/25/why-blockchain-will-impact-the-art-market/#74d9be474973>  
2 <https://www.4art-technologies.com/>  
3 <https://www.artory.com/>  
4 <https://codexprotocol.com/>  
5 <https://verisart.com/>

half of the works examined by the Fine Art Experts Institute in Geneva are fake or have been attributed to the wrong artist.

One company applying blockchain technology to achieve transparency, anonymity and security to protect records of creation and ownership is Verisart. The company is building an evidentiary infrastructure for artworks and collectibles that is verifiable by anyone. Users can create a museum quality record for any object in two easy steps using their mobile device or computer. Records are encrypted and timestamped by the world’s most-trusted decentralised ledger and certificates are easy to manage and can be shared or transferred at any time.

*“DLT... can build on the existing work that other technologies have started to tackle, to streamline processes that are currently slowing down museums and the like.”*

**Bernadine Bröcker Wieder,**  
CEO, of Vastari

When it comes to museums, DLT may be the missing link to finally moving many existing paper-based processes online. Having distributed servers for condition reports, insurance documents, loan agreements and operational documents can mean these files would finally be dynamic, linking to Internet of Things (IoT) sensors in display cases or ticketing machines, to build truly twenty-first century systems beyond what the cloud did for collection management.



## Digital trading and auction houses

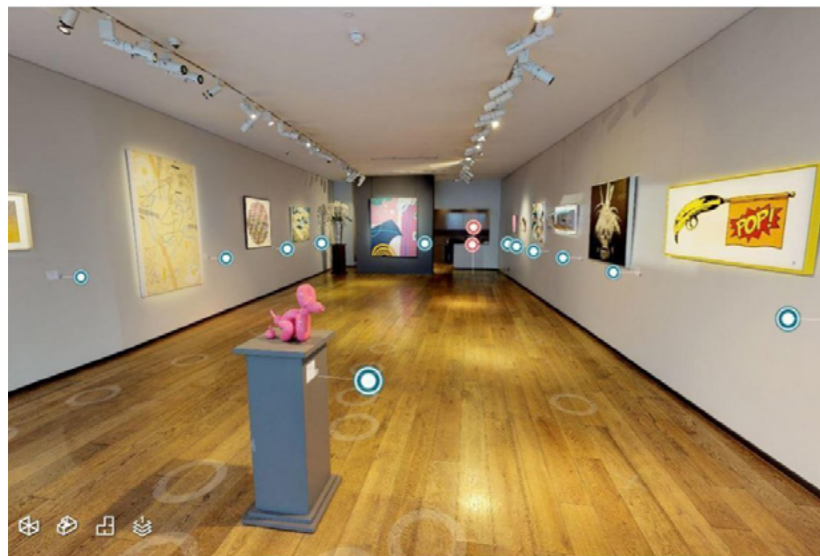
2018 saw a few key moments in art auctions. Firstly, the world’s first cryptocurrency art auction took place. Using the [Maecenas<sup>1</sup>](https://www.maecenas.co/) platform, buyers were offered the chance to own a fraction of Andy Warhol’s 14 Small Electric Chairs, valued at £4.2 million.

In November 2018, the [Barney A. Ebsworth Collection<sup>2</sup>](https://www.christies.com/lot/lot-317801250) sale at [Christie’s auction house<sup>3</sup>](https://www.christies.com/lot/lot-317801250) in New York raised \$317,801,250. The sale marked the first time an art auction at this price level has been recorded on a blockchain, via a secure digital registry administered by [Artory<sup>4</sup>](https://www.artory.com/), a leading art-centric technology provider.

Earlier that year, Christie’s, Vastari and Christie’s Education hosted an Art and Tech Summit, exploring the potential applications of blockchain within the art market. This year, the Art and Tech Summit, hosted by Christie’s, Christie’s Education and Hyundai, will be devoted to the A.I. Revolution demonstrating the focus the established auction houses are now putting on technology.

It is no surprise as the traditional auction houses are seeing disruption to their core business model. New digital trading platforms means that more and more people can buy and sell artworks. New methods of payment (for example cryptocurrency, as per Maecenas) are also starting to be utilised. That’s not to say that the auction houses aren’t embracing the technology and opportunities also.

1 <https://www.maecenas.co/>  
2 [www.christies.com/lot/lot-317801250](https://www.christies.com/lot/lot-317801250)  
3 <https://www.christies.com/lot/lot-317801250>  
4 <https://www.artory.com/>



With a focus on the lower value end of the art market, The Auction Collective aims to open up the auction experience to the next-gen of collectors and first-time buyers. They are only able to do this through their advances in auction and payment technology. By creating the world's first downloadable bidding paddles they have created the first self-registration auction platform which, when combined with the latest in fintech payment, allows them to run on extremely low overheads. This gives them the freedom to continue selling lower value art and open the opportunity to own art to more people than ever before.

*"On the Blockchain, anyone can be an art dealer"*

*Wired, Jan 2019*

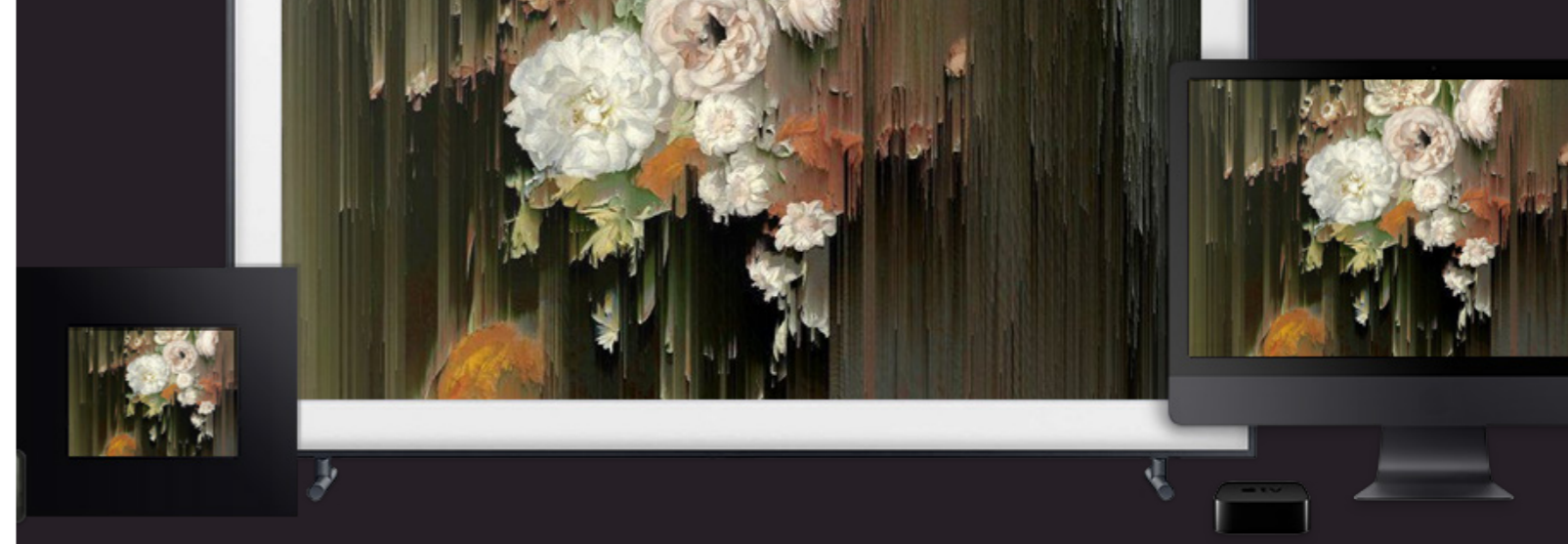
Advances in technology have allowed new art businesses to rise in the industry that previously would have been out-priced by high-rent and setup costs. Social media platforms like Instagram provide an instant, free 'shop window' and catalogue for galleries and auction houses to advertise artwork and interact directly with collectors.

It also provided a testing ground for [The Auction Collective](#)<sup>5</sup>, the latest auction house to hit the art industry. Founder Tom Best explains: "We are the first auction house to sell artwork directly from artists and charge no buyer's commission. This is revolutionary in both instances. I loved the idea but didn't know how the market would respond to it. So I ran a couple of trial auction evenings in Shoreditch that used only an Instagram account to advertise the artworks. They were a success with hundreds of people joining and artists and buyers wanting more. So I quit my job and started the Auction Collective."

<sup>5</sup> <https://theauctioncollective.com/>

Auction Collective pledge to work with the best artists, art advisers and galleries to run hassle free auctions with no hidden fees. Countering the trend to run online-only auctions, it also caters to today's 'experience seeking' consumers by always running physical exhibitions and live auctions.

The future with the likes of The Auction Collective is to bring the gallery experience to international collectors using 360-degree image scanning to create an online VR gallery of the exhibition. Collectors not able to visit the exhibition can explore the gallery online as if they were there in person and then leave bids accordingly.



## Digital displays: the new blank canvas

We have seen the blurring of screens with smart TVs linking to the internet, smartphones and tablets, PCs and Mac Pros all merging into multipurpose digital displays. The 'Samsung Frame' is already unlocking the potential for art lovers to display artwork from an enormous [collection of stock images on their TV](#)<sup>1</sup>.

Screen quality has come on in leaps and bounds, with 4K, OLED and HDR technology, with [MicroLED not far away](#)<sup>2</sup>. Ultra-high-resolution digital monitors are increasing used to display artworks – both for digital art and reproductions of originals.

With such high-quality displays and the blurring of screen functions throughout all walks of life – in home, transport, museums retail etc – the use of screens to display a stream of artworks could become the norm.

Capitalising on people wanting to collect, trade and enjoy artworks on all screens is [Sedition](#)<sup>3</sup>, which sees the digital display as a blank canvas and is the leading platform committed to showcasing and selling art exclusively for screens.

An artist can upload artwork that can be purchased and securely stored in the buyer's Vault along with its Certificate of Authenticity. Any artwork available on Sedition that is not sold out can be accessed via Sedition's subscription service - Art Stream. Sedition's Art Stream allows you to enjoy any artwork on its platform via a monthly subscription. Selected artworks are added to the subscriber's Vault as a playlist, which they enjoy on their screens using a Sedition app. Sold out artworks belong to collections and an Edition can be purchased from them via the Sedition Trade Platform.



<sup>1</sup> <https://www.samsung.com/uk/tvs/the-frame/highlights/>  
<sup>2</sup> <https://www.cnet.com/news/microled-oled-screen-technology-samsung-the-wall/>  
<sup>3</sup> <https://www.seditionart.com/>



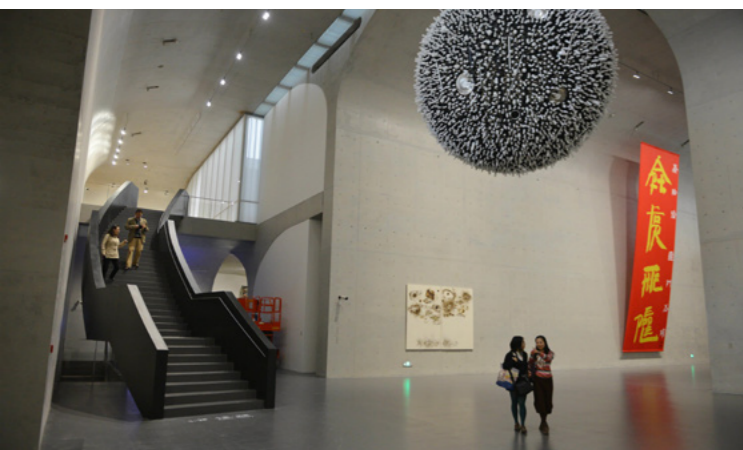
## Art as a new asset class

*“For better or worse, art has now been regarded as an asset class”*

**Harry Blain,**  
CEO, Seditio / Blain | Southern

Artworks do not generate any cash flows that can be discounted, except through income from lending – through storage, insurance costs and so on. The art markets are also virtually ‘unhedgeable’, discouraging investors. However, all the future opportunities discussed in this report, suggest the emergence of a financial art market where fine art is considered a new asset class.

The art market now is truly global with people are buying and selling art every day and moving around the world to find the desired items. The outstanding value of artwork is in excess of \$3 trillion with annual sales in the art and antiques market in the region of \$50 billion.



There is also a worldwide increase in prosperity, especially in emerging countries. As citizens reach a certain level of affluence, they start to buy art. China is now third in terms of sales after the US and the UK.



As more countries become wealthier, more artists produce more art. As a result, an increasing number of investors see art as part of their diversified portfolio alongside other exotics and the demand for ‘real assets’.

“ There is a growing recognition of art as an investment asset class by investors. People become more sophisticated in their financial planning and they begin to view art as an investment”

**Adriano Picnati di Torcello, Senior Partner, Deloitte Luxembourg**

But such a focus on financial returns does seem to fly in the face of the true purpose of art. According to Seditio’s Harry Blain: “Artists don’t want their work to be bought as if it was a bond. That’s not why they create the artwork”.

Future technology is without doubt going to be the key accelerator of the capability for investors to be able to buy, sell and collect art. Who wouldn’t be excited about the prospect of taking fractional ownership in their favourite artist’s work? Something that in the past was just not feasible – now we can say that art could in the future belong to everybody.

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