

The Art Market & New Tech: Marketing Unique Goods by Means of AI?

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Abstract. While the application and applicability of new technology has become prevalent in the economic discourse, the topic is affecting various non-economic sectors of society. Art – as field of unique, auratic craftsmanship – is no exception. While the analogue nature of art and its' physical encounter are considered essential for the production, marketing and consumption of artworks, the digitalization of the art market is calling established marketing theory and practice into question. However, an analysis of the capitalized global art market suggests it time to explore the potential of novel technologies: Beyond established online marketplaces and databases, i.a. artificial intelligence, algorithms and algorithmic networks, machine learning, robotics, virtual reality, crypto currencies and blockchain technology are transforming the marketplace, thereby challenging the traditional understanding of art as well as established marketing strategies. Against this background, this conceptual poster paper predicts a strong and potentially disruptive impact of new technology on the art market. First, it introduces the particularities of the art market from an economic perspective. Second, on this basis, it presents the limited state of research relating to the use of novel technologies in the art market, thereby identifying a research gap. Third, and in order to fill this gap, it presents a selection of current market trends to underline topicality and inspire additional research. By presenting potential research questions, the paper inspires extended market analyses and initial empirical research. It concludes with a call for action.

Keywords: New Technology, Artificial Intelligence, Marketing Innovation, Art Market, Cultural Economy, Digital Art, Virtual Reality, Machine Learning, Block Chain, Crypto Currency, Algorithms, Robotics

1 Introduction

1.1 The Contemporary Art Market

Traditionally, art has been recognized as a cultural value system, dominated by the valence of i.e. an artworks' aura, authenticity and aesthetics[1]. Evidently, this non-economic notion of art is outdated since the emergence of a highly sophisticated, capitalized and globalized art market and the increasing interest in art as investment[2]. Once again in November 2017, the auction sale of Da Vinci's «Salvator Mundi» at a record price of \$450 million reemphasized the current valuation of art in financial terms and underlined the appreciation of art as financial asset[3]. Despite the capitalization of artworks, the art market is still referred to as special market for unique, singular goods. Following this statement, different rules and norms apply compared to conventional markets[4].

1.2 Disrupting Marketing Theory and Practice

A market analysis reveals a potentially disruptive use of novel technologies in the art market: Following the emergence of online marketplaces, online price databases and online bidding systems, recently, artificial intelligence (AI), algorithms and algorithmic networks, machine learning, virtual reality (VR), crypto currencies and blockchain technology are entering the marketplace. These technologies are challenging customs in a globalized, yet conservative market[5]. At the same time, the compatibility of art and new technology is called into question along with its' impact on established marketing theory and practice.

1.3 Outline

Based on the topicality and the assumed disruptive potential of new technologies in the art market, this conceptual poster paper first presents the results of a literature analysis. By uncovering the limited amount of research in the field, the author identifies a research gap. She conducts a market analysis in order to fill this gap. More precisely, a selection of current technological trends affecting the production, marketing and consumption of artworks is presented. The findings first and foremost point to the necessity of further research relating to the use of new technology in the art market. Second, they provide a broad range of inspiration for additional studies. Concluding, the paper incentivizes further market analyses and initial empirical research. It does so in order to provide a better theoretical understanding of the contemporary art market and to reveal the economic potential of new technology in marketing practice. Thus, the theoretical contribution lies in extending knowledge about the application of new technology in the art market and in initiating studies on its' applicability. The practical contribution lies in identifying areas of action for existing businesses and business model innovators.

2 State of Research and Research gap

2.1 New Technology & The Art Market

The use of new technology is broadly discussed in marketing research. Key streams are dedicated to New Tech for Marketeers[6], Marketing for New Techs[7], Intelligent Agent Techs[8] and the Consumer Perspective[9]. Likewise, attention is focused on potential and limits of novel technologies as well as on their micro- and macro-level implications on businesses and economics[10]. In addition, i.e. adoption, risk and (workplace) change are discussed alongside data and legal security as well as regulation issues[11].

However, there exists only limited research about the use of innovative technologies in the art market. While i.e. Zeilinger[12] discusses the financialization of digital art by means of blockchain technology, McConaghy et al. conduct a case study relating to the use of blockchain for the "identification, attribution, and payment for digital [art]work"[13]. Referring to bitcoin technology, Dallyn[14] understands cryptocurrencies as market singularities. He establishes a connection to Karpik's conception of an artwork as special, singular good. Other researchers seem particularly interested in the relation between creativity and artificial intelligence. Likewise, Boden[15], Dartnall[16] and Bringsjord & Ferrucci[17] discuss this intersection and distinguish between different types of AI.

2.2 Research Gap & Research Questions

Despite the public and scientific discourse about novel technologies as well as initial studies at the intersection between new technology and art, literature relating to this issue is scarce. More precisely, neither use cases nor empirical data analyses are available. This fact points to a research gap. Further, existing studies not only express interest in technological innovation on the art market but voice an urgent need for further research[12-17]. On this basis, this conceptual poster paper addresses two research questions:

- (1) *How is new technology currently applied in the art market, what are application fields and current use cases?*

And on this basis,

(2) What is the future potential of new technology in the art market, how will it transform and potentially disrupt the art market?

In order to answer those questions and to fill the identified research gap, the next section comprises initial results of a market analysis.

3 The Art Market & New Tech

3.1 Market Analysis

New businesses are introducing innovative technologies into the art market: i.e. artificial intelligence, algorithms and algorithmic networks, machine learning, robotics, virtual reality, crypto currencies and blockchain technology are entering the marketplace. They are disrupting the traditional infrastructure and are challenging established marketing practices. The following section lists initial results of a market analysis. It presents a selection of current application areas to prove topicality and necessity for further research. The conceptual poster paper aims at initiating a scientific debate and subsumes with a call for action.

3.2 Selection of Technological Trends

Following are a selection of application areas that illustrate the innovative and potentially disruptive application of new technology in the art market. Each example is followed by associated questions:

Artificial intelligence (AI). A few artists are innovating the production of art by means of AI and machine learning. Previously, a fictitious artwork in the style of the deceased artist Rembrandt had been created based on AI technology and 3D print [18]. However, the American philosopher Sean Dorance Kelly argues, that «Creativity is, and always will be, a human endeavor»[19]. *Is artistic authorship intrinsically human or can machines claim authorship?*

Algorithms, Algorithmic Networks and Machine Learning. Artists such as Trevor Paglen, Mario Klingemann and Anna Ridler create artworks by means of algorithms, algorithmic networks and machine learning. They challenge the impact of artificial intelligence on society and social interaction[20]. *How will algorithmic creation disrupt established practices in art production and consumption?*

Blockchain Technology. The software development company Blackfactory considers blockchain technology as key trust and transparency guarantor. Their founders claim that the tracing ability of blockchain will professionalize the field of art investment[21]. *Which effects will blockchain technology have on the eligibility of art as investment? Will it reduce trade with looted art and counterfeits?*

Crypto Currencies. Inspired by the Great Tulip Mania in the 17th century, the artist Anna Ridler sells fictitious tulip bulbs as video art[22]. The true value of her artworks – like the market value of flower bulbs during Tulip Mania – will be revealed only after the acquisition of a related bitcoin. This marketing practice points to the nature of art as financial asset. *How will bitcoin technology affect art investment? And will bitcoin artworks be the latest trend?*

Robotics. The artist duo Pors & Rao uses robotics and responsiveness to create sensitive artworks with human features[23]. Pors & Rao produce their art in close collaboration with the research department at ETH Zürich. Their artworks enable humanlike interactions and suggest new forms of art experience and ownership. *How will robotics affect the consumption of art? Will it change relations between artwork and collector?*

4 Conclusion

4.1 Initial results

This conceptual poster paper first presented the limited state of research related to the use of new technology in the art market. Despite high theoretical and practical relevance, it identified a research gap. On the basis of this finding, a market analysis was conducted. By providing examples for the use of new technology in the production, marketing and consumption of art, the paper proved topicality. It illustrated an increasing use of novel technology in the art market. Thus, the theoretical contribution lies in extending knowledge about the application of new technology in the art market. The practical contribution lies in inspiring traditional marketing by pointing to innovative practices. Finally, the poster paper aims at inspiring further research.

4.2 Further Research

Based on a literature and market analysis, central issues relating to the application and applicability of new technology in the art market were presented. Beyond that, further questions should be addressed: *What is the artistic and what the economic potential of new technology in the art market? Which changes affect the marketing and trading of artworks? What are the associated risks and adoption issues? What is their potential? And to what extent will novel technology replace established marketing practices in the long term?* By pointing to these questions, this paper aims at inspiring initial empirical research and extended market analyses. It concludes with a call for action.

4.3 Call for action

The conceptual poster paper proves topicality and expresses the necessity of further research about «The Art Market & New Tech». Likewise, researchers from diverging disciplines are sought to explore and challenge the application and applicability of new technologies in the art market. Their findings are expected to be of high practical relevance for the art market and of high theoretical relevance to associated disciplines, such as information technology, marketing and cultural economy.

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