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Art markets

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The advent of digitization has had a profound impact on the art market and its institutions. In this chapter, we focus on the market for visual arts as it finds its expression in (among other) paintings, prints, drawings, photographs, sculpture and the like. These artistic disciplines claim the lion's share of the global art trade and its objects are prominently featured by museums and galleries in both old and new art centers worldwide. Digital delivery has not only altered the content of the visual arts, but also the manner in which art is traded, consumed and valuated. The various actors in the art market have embraced digitization in its many guises and forms, and its online applications, albeit at different speeds and with different intensity. The vast majority of art institutions (including artists themselves) makes use of websites and incorporate databases for organizational, educational and marketing purposes. However, few have learnt to effectively capitalize on Web 2.0 applications as of yet, even if social media offer unparalleled opportunities for community building in the art world (Castells, 2011). The largely informal and opaque character of the art market with its continued emphasis on closed dealer-collector networks of and face-to-face contacts appears to pre-empt widespread use of social media for now. Still, as with other sectors of the creative economy, the art world and market is undergoing significant changes as a result of the digital revolution.

Digitization per se is not revolutionary; the transformation of analog information in the form of texts, images and sound to a digital form which can then be stored, manipulated and transmitted through a range of networks and devices has been around for decades (McQuail, 2000). The Internet has served as a vital platform to disseminate such digital content over the years. However, its contemporary Web 2.0 structure of being participatory and user-driven in the

generation of content promises a revolution in how information is accessed, constructed and converged (O'Reilly, 2007).

In the art world, digitization has manifested itself through the creation of databases containing tremendous information regarding prices, the type and characteristics of a work of art, authorship, provenance and records of previous sales which are now available for professionals, art lovers to amateur art consumers. Literally millions of images of works of art have been digitized and disseminated, primarily but not exclusively in the form of websites hosted by museums, galleries, research institutions, blogs, artists and online searchable databases that have a commercial and/or educational purpose. Also, new art forms have been brought to life, which have no physical presence and exist *merely* as a computer image. In this brief chapter, we do not concern ourselves with digital art as such, but aim to provide a framework for understanding the art world in this information and social networking era, and reflect on the ramifications of digitization particularly with regards to knowledge construction in the art world and the valuation of works of art.

Digitization in the art world: Context and history

In this section, we will survey how the various actors and gatekeepers in the art world have engaged digitization and the Internet since the late 1990s. *Art galleries* around the world have been slow in their involvement with the Internet compared to other creative industries, and it is only in recent years that gallerists have come to realize the advantages of an online presence for marketing purposes. Their websites tend to feature mostly profiles of the artists they exhibit and sell, but high-end galleries often do not advertise prices of the works for sale. The sites further include (practical) information about the gallery itself and upcoming events such as vernissage, but seldom engage in an online dialogue with their clientele via social media. However, by the very nature of the art they present, galleries promoting digital art have been much more innovative in engaging their audiences, and have even made them as part of the creative process in some instances (Bischop, 2012).

Similarly, *auction houses* have by and large been rather conservative in their engagements with the virtual realm. Surely, the catalogues are routinely digitized and put online along with the practicalities of a live auction, but the established auction houses such as Christie's and Sotheby's have so far not been successful in capitalizing on the opportunities that new technologies offer for

purely online sales. Costly attempts in the early 2000s for online transactions were soon abandoned. Most established auction houses therefore view digitization and the Internet as little more than an extra marketing tool within their existing business model, whereby one has the option to bid online on works presented at real life auctions. On the other hand, auction houses in emerging art markets have been far more cutting-edge in applying online interactive technologies in the marketing of art. For instance, India-based Saffronart introduced mobile phone bidding and has been a pioneer in organizing lucrative online auctions for fine art (as opposed to online sales organized by eBay which offers far less valuable pieces). In some cases these virtual public sales include newly created works, and proceed without a reserve price which precludes any buy-ins. Both strategies are considered to be detrimental by western auction houses.

By comparison, *art museums* have made extraordinary use of the technological innovations to seek out and engage with existing and new audiences, and to make their collections available to the global community of art lovers. Shrinking national budgets towards art institutions, a significant increase in the number of museums and competition, and the general increase in demand for leisure-time activities have made embracing social media a necessity in public outreach (Loran, 2005). Besides, museums have been undergoing a transformation in their role from being a custodian of cultural heritage to an educator who engages and entertains the audience. While the 'museum without walls' idea of audience involvement has been around for decades (Bearman, 1995), new media has succeeded in materializing this through varied imaginative spaces of engagement. This works well with the bottom-up nature of social media that compels museums to listen to their audience and design exhibits and digital interfaces of art objects that appeal to a diverse and global art consumer base. There are various positive outcomes of the museums' online activity: users' increased awareness and recognition of art, reinforcement of cultural heritage and national identity, creation of a community around the museum, and the strengthening of audience trust in the institution (Kidd, 2011). Digital platforms have made interactivity possible and customization feasible through a range of creative means. For instance, we now have available the online chat option with curators on museum sites and the possibility to foster art communities around digital video hosting of new art exhibits. Another innovative feature is the online tour of the museum where visitors can virtually navigate and educate themselves about the art collection at their own pace and of their own choosing.

Digitization of art collections has enabled audiences to access and experience museum art regardless of their physical locations. Recent advances in technology have spawned ambitious endeavors such as the Google Art Project that aim to make such experiences richer and more fulfilling to art lovers worldwide through their high-resolution images and playful navigation affordances of top museums around the world. While art consumers enjoy browsing and learning about art through this digital edutainment approach, the museums learn about their consumers via cookies that follow visitor movements and amass a wealth of information about audience behavior and taste. A growing number of museums are opening up to co-creation with their consumers via media events that parallel the culture of Web 2.0. For instance, the Guggenheim museum conducted a Biennial of creative video called 'YouTube Play' and invited amateurs of creative and innovative videos to participate, resulting in thousands of user-generated video submissions and public visibility for the museum. Furthermore, as databases move online, there is a pressing need for more standardized and international means of coding and categorizing of data for seamless inter-institutional sharing of databases. Emerging markets such as India are harnessing such possibilities by executing the most wide-scale digitization of their cultural heritage and gaining visibility by optimizing their art data for search engine algorithms. In other words, certain art forms are being privileged over others and such politics have wide implications on what constitutes as the nation's heritage online (Prasad, 2011).

An analogous development to the art repositories in the art market made possible by digitization has been the emergence of a host of *online databases* such as Art.sy, Artprice and Artnet. These databases have been populated by data related to artworks, artists and schools and are increasingly shared and made accessible through the Internet. The earliest example of a sustained effort to collect data on the art trade was compiled by Gerald Reitlinger during the 1960s, which was published in three volumes (Reitlinger, [1961-1970] 1982). This database – now considered flawed in some respects – remains a seminal and pioneering work since it was the first to make available longitudinal series of art prices (Guerzoni, 1995). Reitlinger's example inspired others during the dot.com revolution of the 1990s to make available large sets of data pertaining to art sales through the Internet, often with a commercial purpose in mind. These databases are sometimes exclusive with access limited to subscribers while in other instances, they adhere to the principle of open access where the available information is free for all to use. Either way, the wealth of these digitized datasets alerted art market professionals as well as cultural economists

to the possibilities for systematic research into price histories. Econometric tools were hereby utilized to gauge the extent to which art has been a worthwhile investment compared to other financial assets. Many art indices have seen the light in the last two decades. Some are based on the repeat sales method, using prices of the same art objects traded at two or more distinct moments in time. Others are based on hedonic regression analysis, which decomposes a work of art into its constituent characteristics such as size and subject matter, and calculates the value for each of these components. Both methods have their strengths and weaknesses, but allow for more informed estimates of return on art prices and have led to a flurry of publications on art as a vehicle for investment (Ginsburgh and Moses, 2006) includes an extensive bibliography). Interestingly, despite the fact that great strides have been made in quantitative art market research thanks to the availability of online databases and these analytical tools, no consensus exists among cultural economists as to whether art effectively is a sound financial investment (Ashenfelter and Graddy, 2003).

Nevertheless, the growing number of investors and media covering the art trade has been relying on indices such as the Mei Moses Fine Art Index to track market trends. Recently, a new generation of relational databases is taking the characteristics-model one step further. Taking their cue from the successful Music Genome Project, Art.sy has employed a staff that includes curators and art historians who deconstruct paintings into a myriad of properties ranging from formal qualities, belonging to a certain artistic movement and information concerning the artist. The aim of the company (which counts leading art gallerist Larry Gagosian and Google's Eric Schmidt among its investors) is not just to provide information, but to target potential buyers directly by offering serendipitous artistic discoveries. By taking stock of their appetite for certain types of art or artists, the site steers collectors towards comparable works that they might not be aware of, but are in line with their revealed preferences. These computer scripts thus operate as a supply inducing demand mechanism. However, the goal of the site is not to sell directly, but to connect interested buyers to the galleries that hold these paintings in their inventory. As such, Art.sy facilitates the traditional face-to-face meeting with a dealer. Again, because of the prominence given to personal contact and direct communication, art institutions have not fully embraced e-commerce. This sets the art market somewhat apart from trends in other cultural industries such as the popular music industry, which thrives on downloadable songs and the streaming of video clips.

The power of algorithms and the implications of digitization for the art market

Learning about art in the digital age

Contemporary digitization of art information has created the possibility of an unprecedented democratic sphere for universal access to learning that pervades across borders, regardless of geographic location, income and cultural contexts (Trant and Bearman, 2011). While indeed the Internet with its low barriers to entry has enabled widespread access to the arts, and Web 2.0 interactive features have facilitated a more personalized and immersive learning experience, this has also created a tremendous information deluge. The need to sieve through this abundance of information and be able to identify 'relevant' art knowledge has become a significant challenge. This has led to corporate, state and other actors to step in and compete in the shaping of these information processes. For instance, we see well-renowned museums, galleries and auction houses invest heavily in becoming visible online, extending their expertise and authority to the virtual realm. Interestingly, some smaller museums, commercial galleries, art lovers and amateur artists are gaining stride online as they voice their opinions and gain a mass following via creative and entrepreneurial play with digitization and social media. For instance, recent rankings of the most popular museum bloggers include the Brooklyn art museum (a small museum in New York), Culturegrrl (an independent professional), and Yesterday.sg (a community art blog aiming to preserve Singapore's cultural heritage) (Verboom and Arora, 2013). So it seems that who constitutes as an authority in art takes on a pluralistic form within the museum blogosphere. While this digital backdoor is often the only way for smaller actors to make their mark in the contemporary artscape, this also poses a challenge in making sense of the role of conventional art experts in shaping art knowledge in the digital domain.

There is considerable concern about this popularization of art knowledge as there is much emphasis on entertaining and educating the audience, and tailoring art information to suit the needs and moods of the audience. The art world is hardly immune to the larger social media trend of the 'filter bubble' where the web algorithm selects information for the user based on their prior search behavior, location and their personal profile. In other words, the art audience gets trapped in their own cultural and 'ideological bubble' as alternative and novel perspectives are filtered

out of their learning world (Pariser, 2011). This inward learning can perpetuate conventional ideas of the art and art market in general, irrespective of contemporary and international dynamics pervading this field. There is also danger of peripheral learning as museums are compelled to take on more popular themes reflecting cultural tourism agendas and the new tourist demographics, with some museums potentially transforming into 'degraded cathedrals of tourism' (Davis, 2011). Lastly, it is important to keep in mind that learning of art is not just a cerebral but an emotive experience and this affective state influences the consumer's notions on the value and meaning of the art. As digitization becomes more sophisticated in its multimodal quality, the capturing of the 'aura' of the art object to more authentically represent and encapsulate the understanding of art becomes more of a reality. However, this creates a 'digitization' divide based on those who have access to high-quality multimodal and hypertextual art experiences and those who do not, reminding us that universal learning about art in the digital age is still a distance away.

The valuation of art in the digital age

The vastly increased amount of information relative to artists and their works has had some salutary effects on the way the art market operates. In short, it has improved the transparency of a market that has long been characterized as secretive, and transaction costs have been reduced. New communication technologies help to connect dealers and collectors more efficiently, thereby lowering search costs. Also, empowered consumers can now gather crucial information on price histories of their favored artists without the help of an expert, allowing them to make more educated decisions about what to buy or not, and how much to spend. And as an unintended side effect, this might reduce the opportunities for arbitrage for dealers and other intermediaries, who can theoretically be bypassed altogether.

The advantages of a digitized art market with its informed buyers – complete with art indices produced by cultural economists and professional art consultants – may have attracted new investors looking for alternatives to the usual financial assets, but this has not changed the heterogeneous nature of the visual arts market with its mostly unique and infrequently traded goods. In other words, despite the increased flow of information brought forth by technological

intermediaries, investing in the art market essentially remains (in William Baumol's words) a 'floating crap game' (Baumol, 1986).

On a more fundamental level, the digitization of the art market is having an impact on the demand and valuation of works of art. After all, the aforementioned databases and other technical intermediaries associated with digitization are steered by powerful algorithms made up by sets of instructions that implicitly guide our searchers. These protocols are by no means neutral and affect the valuation of art and artists in various ways. Firstly, the builders of art databases make a selection of works of art to include in their datasets while others are left out, thereby either limiting or enhancing the exposure of browsers to particular artists and their work. More exposure leads to more visibility in the market place, and may increase demand for these pieces and thus result in higher prices. However, the selection criteria are often not clear. Secondly, the chosen artworks subsequently are coded to enable associations between artworks with similar characteristics. Various properties are ascribed to these works, many of them of an objective nature (size, support) while others much more subjective (style, composition, appreciations). Again, these categorizations steer the outcome of our searches and can engender demand for previously unknown or less valued artists, but the criteria used in these coding exercises have not been made transparent. Thirdly, art databases will track and map our browsing patterns. This form of online surveillance allows them to modulate our future visits to their sites, steering us in certain directions by further enforcing the process of shaping our customized taste for art.

Concluding observations

The availability of a plethora of art market e-data has rendered a market that is usually seen as secretive and lacking in disclosure much more transparent. Moreover, digitization has created innumerable possibilities for research on the relationship between information access and social practice in the art world. The many inquiries by both professionals and academics has led to far greater insights into the workings of the art market than previously considered possible, and has gone a long way in resolving some of the more pressing information issues typically associated with the art world. For instance, it has become possible to track the price histories of particular works of art as they changed hands on the global art market. Concretely, empirical studies have revealed that the visual art market is quite segmented, and that demand for, say, Impressionist

paintings might respond differently to external shocks than the market for contemporary art (Buelens and Ginsburgh, 1993).

In general, art consumers have much more access to basic information relative to provenances, artists, exhibitions and so forth. Moreover, the emergence of countless new interactive sites has added a new layer of infrastructure to the art market, resulting in a magnifying effect which allows for closer interactions between dealers and curators and their potential buyers and audiences. Interestingly, this avalanche of information appears to be strengthening the role of the traditional gatekeepers, rather than eroding it. It is in the face of this overwhelming availability of data that consumers are in need of trusted sources and reliable intermediaries to guide them (Arora and Vermeylen, 2013). In fact, while the Internet has certainly been instrumental in the further globalization and commercialization of the art market, the time-old structure of the market and how it operates has not been fundamentally challenged (Velthuis, 2012). Furthermore, despite the promise of a digital revolution that would render the traditional art institutions and experts obsolete, it has been suggested that the art world since the 1990s has predominantly shunned the virtual realm rather than embracing it (Bischop, 2012).

Nevertheless, it can be argued that digitization and its online manifestations is causing a shift in the art market from an object based and supply-side oriented market to a more consumer driven market. While no real empirical data exist to support this claim, it is assumed that the combination of a spectacular rise of new buyers in emerging markets and the exponential sophistication of digitization technologies outlined above (the power of big data) has started to empower buyers as well as art lovers.

This said, digital resources and overall improvements in communication technologies have not necessarily led to a dramatically more integrated global art market. Besides the strong local embeddedness of even the most outward looking art centers such as New York or Hong Kong, significant differences in transaction costs between global art centers remain, mostly as a result of diverging rates of taxation such as import and export duties, trade restrictions and value added taxes (VAT). These costs have not been offset by the leveling effect of e-commerce. Consequently, the law of one price, which would indicate a perfectly integrated market, where identical works of art (or close substitutes) are uniformly priced worldwide, does not apply (Ashenfelter and Graddy 2003; Isard, 1977).

Finally, art is an experience good which denotes that art lovers and buyers only determine the quality of a work of art upon consumption. Many art consumers derive pleasure from the personal contacts with artists and dealers in a gallery or an art fair, by attending an art auction or by physically perusing through the galleries of a museum admiring the tactility of the works of art displayed on the walls. While nobody seriously argues for the online reproduction of the 'aura' of material art, a sophisticated hyperrealistic platform can deeply enhance the desire to learn and engage further into this art arena.

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Suggestions for further reading

Comprehensive studies focusing on the wider impact of digitization on the art market as a whole are still lacking, but some important aspects have been addressed. Paul Marty (2007) provides a fine introduction to museum informatics, the study of how information science and technology affect the museum environment , while we (Arora and Vermeylen, 2013) have examined how new media have impacted the construction of art expertise, and raised doubts whether the Internet is undermining the traditional role of art experts as arbiters of taste.