

Platform Economy Leads Innovation in the Development of Artworks Industry

Zhao Qingdi

Economics (Mathematical Economics & Finance) Jinhe Center for Economic Research, Xi'an Jiaotong University, China

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Abstract: As an emerging industrial model, platform economy plays an important role in innovating business models, integrating and perfecting industrial chains, and improving resource allocation efficiency. Recent years have witnessed the rapid development of the Internet platform, the combination of it and the art industry has broken the traditional business model, trading procedures and industrial system of the traditional culture and art industry, and created a new industry development path. By summarizing the characteristics of Internet art platform, including economies of scale, IT technology advantages, and ability of integrating industrial chains, then taking the typical representative of online platform economy--the "Artron Art Network" as an example, the general embodiment of the industrial development innovation caused by platform economy can be reached, which can provide theoretical guidance and practical reference for the further development of culture and art industry.

1. Introduction

As one of the branches of industrial economy, platform economy is closely related to the theory of bilateral market. The cutting-edge and highly practical theory of platform economy has stretched across many industries. With the continuous development of economic activities, the "platform", working as a link between the supply and demand sides of bilateral market, relying on real or virtual space, and promoting the realization of income through the combination with electronic information technology, is rapidly expanding in business and industry, and has formed a specific business model and corporate competition strategy. Based on this, the platform economy came into being gradually. As a master that epitomizes the three major trends of globalization, networking, and informatization (Li Yunyao & Liu Haiyun & Huang Shaojian, 2013)¹, the platform economy has already had a wide range of business scale and created huge benefits for economic and social progress. This new economic form promotes the rapid integration of production factors, the rational allocation of resources, the innovation of business models, and the overall improvement of social productivity (Shi Jianyong, 2013)².

Among different industries, the artwork industry is no exception. The combination of it and Internet platform has opened up a new era for traditional culture and art industry and created a new way of business development. In 1995, the establishment of "artnet.cn" in the United States was the beginning of Internet artwork platform. Since then, domestic online platforms such as "Jiade Online", "Zhaoyong Online" and "Shengshi Collection Network" emerged in endlessly, changing the traditional art market quietly. The rapid development of information technology and the advent of web3.0 era have promoted the formation of an Internet artwork platform system which integrates online gallery, online exhibition, online auction, information portal, online transaction, financial investment and other functions (Zhang Meng, 2008)³. Different from the transactions through traditional offline artwork stores or live auctions, based on the characteristics including network externalities, user multilateral belonging, economies of scale, and asymmetric pricing structure, Internet artwork platform has integrated features of Internet and artwork, and developed new

¹ Li Yunyao, Liu Haiyun, Huang Shaojian. Research trends of platform economy theory [J]. Economics Trends, 2013(7):123-129.

² Shi Jianyong. New Economy Form to Optimize the Economic Industrial Structure -- Micro Operational Mechanism Research on Platform Economy[J]. Shanghai Economic Research, 2013(8).

³ Zhang Meng. Spring for Online Art Auction is Coming [J]. Shanghai Economy, 2008(6):77-78.

business models and cross-border business ecosystem, of which “securing user resources” was the core purpose of operation (Ding Lei & Lei Hao, 2016)⁴.

Internet artwork platform belongs to the research category of artwork market under the theory of platform economics and bilateral market. Short time as it has come into being for, this business model's scale is growing rapidly, reconstructing the development path of traditional artwork industry. Study on the specific embodiment of the innovation that platform economy brought to culture and art industry's development is not only of important theoretical value, but also practical significance. The contributions of this paper are as follows: firstly, it puts forward the innovative development model of the artwork industry under the Internet platform; Secondly, using the theory of platform economics, it analyzes the above model with typical case, confirms the viewpoints put forward, so as to provide theoretical guidance for future business practice.

2. Theoretical Foundation of Researches on Platform Economy and Artworks Market

David S. Evans first proposed the concept of “platform economics” and defined it as the study of unique economic phenomena of specific bilateral market in traditional market economics. As for the Internet platform in virtual space, to achieve operating profit, the platform takes advantage of the economies of scale, accuracy of matching information and asymmetric pricing strategy to attract bilateral users (W. Bolt & A.F. Tieman, 2007)⁵; reduces the operation cost of the platform with the support of electronic information technology. The virtual space not only acts as a link between both parties, reducing the degree of information asymmetry and the transaction costs (Xu Shangqing, 2013)⁶, but also makes platform industry break through the constraints of production elements and geographical environment, integrate interregional market resources, and unite different economic growth points (Ding Hong, (2014)⁷. Platform economics, due to its characteristics, brings significant changes to traditional artworks market's information transmission process and way of transaction (Weiller C. M. & Pollitt M. G., 2013)⁸. Platform enterprises carry out cross-border operation and develop core products and services, so as to achieve the diversity of the industrial ecosystem (Cai Ning & Wang Jiexiang & Yang Dapeng, 2015)⁹. All in all, platform economics has become an important driving force for industrial innovation and development so far.

Artwork trading can be conducted through both online and offline channels, of which the core goal is to create scarce art to maximize the art valuation within the platform. As an emerging artwork information communication and trading mode, Internet artwork platforms are mainly divided into three categories, including seller alliance or entrusted auction platform, artwork information and trading platform, and online gallery (Zhang Guorong, 2010)¹⁰.

Since 2013, the internet artwork market has been experiencing a period of rapid integration. The vital functions of online platform, such as reducing trading links and contract costs, meeting emerging consumer demand of art, increasing information transparency, become increasingly important (Sang Ziwen & Jin Yuanpu, 2016)¹¹. Huang Mingfen (2008)¹² elaborates on the network's profound influence on the artwork industry in terms of the fluidization of artistic roles, the opening of artistic products, and the flexibility of artistic operation. Guo Feng (2008)¹³ proposed

⁴ Ding Lei, Lei Hao. Business Model of Artworks Industry Based on Big Platform Under "Internet +" [J]. Business and Management, 2016(7):51-53.

⁵ W. Bolt & A. F. Tieman, “On Myopic Equilibria in Dynamic Games with Endogenous Discounting”, IMF Workingpaper, 2007.

⁶ Xu Shangqing. Study on Media Platform Economy Under the Perspective of Transaction Cost [J]. Young Journalist, 2013(9):23-24.

⁷ Ding Hong, Liang Hongji. Competitive Development Strategy of Internet Platform Enterprises -- Based on Bilateral Market Theory [J]. Forum of World Economics & Politics, 2014(4):118-127.

⁸ Weiller C. M., Pollitt M. G., Platform Markets and Energy Services[J]. Michael Pollitt, 2013.

⁹ Cai Ning, Wang Jiexiang, Yang Dapeng. Platform Envelopment Strategy Decision and Competitive Advantage Building Under the Background of Industrial Convergence --A Case Study of ZDM [J]. China Industrial Economics, 2015(5):96-109.

¹⁰ Zhang Guorong. On Online Transaction of Work of Art [J]. Business economics, 2010(13):103-105.

¹¹ Sang Ziwen, Jin Yuanpu. Internet Plus Culture Consumption and Research on the Development of Art E-Commerce [J]. International culture management, 2017.

¹² Huang Mingfen. Art and Mixed Reality [J]. Journal of Southeast University (Philosophy and Social Sciences Edition), 2008, 10(6):74-78.

¹³ Guo Feng. Research on Contemporary Chinese Art Market and Its Internet Business Model [D]. Nanjing University of The Arts, 2008.

the cluster development of galleries, the sustainable development of artwork auctions, and the window development of art fairs, as well as the new business model and operation mode of the contemporary Chinese art market. In short, Internet artwork platform, reflecting the “crossover” feature, is not simply a movement of the traditional market from offline to online, but a new consumption environment in the Internet community based on the characteristics of platform economics. It conducts cross-border operation with the core of artwork, creates online artwork business ecosystem, and provides a new path for the traditional culture and art industry (Ding Lei & Lei Hao, 2016). An artwork market with de-materialized, cultural dynamics compliance, and high quality emphasis features has already formed. Therefore, the study of such a market is of important practical significance.

It can be seen from the studies of the above scholars that the Internet artwork platform has a typical bilateral market attribute. The combination of Internet and the cultural and art industry not only highlights the convenience brought by information technology to social life, but also injects new vitality and vigor into the traditional industrial development model. Previously, most of the researches on Internet artwork platforms were summaries of the current development situation or were focused on “Internet +” art e-commerce, but without in-depth discussion on how the Internet artwork platform or a certain type of it leads the development path innovation of traditional art industry. This paper will discuss the specific embodiment of such innovation taking “Artron Art Network” as an example and mainly focus on three aspects, including scale economy effect, advantages brought by IT technology, market expansion and industrial chain improvement. It may provide reference for further construction of the Internet artwork platform and related researches.

3. The Internet Artwork Platform leads Innovation to the Artworks Industry’s Development Path

According to the online transaction process and service nature, Internet artwork platform can be classified into four categories: exhibition type, auction type, securities type and consumption type (Huang Ziqian, 2017)¹⁴. All of the types contain three basic elements of the platform economy, namely platform operators -- platform enterprises, platform participants -- artists and artwork lovers, and platform rules -- regulations, pricing mechanism and trading system that participants must abide by when entering the platform. Ever since the early 21st century, either the specialized artwork portal such as “Artron Art Network” and “Shengshi Collection Network”, or large retail e-commerce platform such as “Taobao” and “Suning”, which also provide the online artwork trading business, most of the online artwork platforms are the extension and development of the offline market. Considering their similarities of structure and operation modes, there are some rules to follow in the study of Internet artwork platform and the innovation it leads to the traditional artwork industry’s development path.

3.1. Enhance User Stickiness through Increasing Economics of Scale Feature

Economies of scale reflects the relationship between the concentration of production factors or the increase of demand and the economic revenue. In the development mode of Internet artwork platform, the realization of scale economy is inseparable from its network externality and the characteristics of long tail economy.

On the one hand, platform generates “user strategies” based on network externalities. The high initial cost of the Internet platform is usually an important factor which prevents potential entrants, while the marginal cost of attracting new users in the later stage is relatively low. Such a situation belongs to the supply-side economies of scale. As for the demand-side, the increasing economies of scale is highly related to the network externalities (Rochet J. & J. Tirole, 2004)¹⁵. The Internet artwork platform provides customers with personalized services, such as membership services and customized services for artists. It also implements exclusivity strategies and develops subnets and

¹⁴ Huang Ziqian. The Study of Pricing of Art Online Trading Platform Based on Two-Sided Market Theory [D]. 2017.

¹⁵ Rochet, J., and J. Tirole. Two-Sided Markets: An Overview[R]. IDEI University of Toulouse, 2004.

associated apps to enhance the core competitiveness of the platform. Through the strategies above and the direct network externalities, the “multiple registration” is inhibited, and users’ sense of belonging and frequency to use the online platform can be greatly increased. In the meanwhile, through the implementation of asymmetric pricing or even the price strategy of subsidizing one party's users, the platform takes advantage of indirect network externalities to gather a broad user base in the initial stage of platform construction, so as to attract and capture the other party's users and earn the registration fee as income.

On the other hand, platform takes advantage of the “long tail market”. Artwork market itself and its subdivision have the characteristics of niche. The network platform provides channels to facilitate information search and acquisition in the artwork market, as well as product customization. The function of “personalized search and service” can help obtain the unpopular small markets’ resources, collect the minority demand and create revenue. Some Internet artwork platforms specialize in one field, such as the transaction service of stamp and coin in the platform “Zhaoyong Online”, which enhances users’ “loyalty”, namely, the user stickiness of the platform, by offering perfect and meticulous services.

3.2. IT Technology Reduces Transaction Costs and Extends Transaction Space

Transaction cost theory was proposed by Coase R. H.(1937)¹⁶, which refers to costs of a transaction associated with information seeking, condition negotiation, etc. With the support of IT technology, Internet artwork platform can play a role in reducing transaction costs and promoting the business model reform.

Firstly, it can gather information resources and reduce the searching costs of users on both sides. Internet artwork platform is a gathering place and classification display of art market information, including the background of artists, auctions and exhibition arrangements. At the same time, specially designed communication space like the “BBS”, also brings two parties of artwork transaction together, increasing the asset liquidity of artwork indirectly, as well as the transaction frequency and the trading profits.

Secondly, the innovation of trading procedures and trading space can reduce the cost of bidding. Internet platforms carry out online pre-exhibition, auction and other online trading activities, which not only avoid the high costs of coordinated operation of human resources and material resources on physical platforms, but also expand the range of users involved in transactions and the number of interactions by virtue of the characteristics of timeliness, globality and interactivity of the Internet, greatly improving the trading efficiency.

Information technology created the Internet platform and also gave it the power to operate all the time. Thus artwork transactions need not be confined to offline stores, galleries, exhibitions and auctions, but can be conducted online anytime and anywhere. The physical space and time range of the trade were greatly extended, which indirectly promoted the continuous prosperity of the art market.

Finally, as a third party, the platform can reduce uncertainty and bargaining costs of transactions. Internet artwork platform acts as an intermediary. It contributes to dissemination and transparent display of artworks market information as well as the conclusion of transaction. Through the margin system, online negotiation auction system, pay intermediary function, artwork quality authentication, logistics support and refund guarantee, Internet artwork platform reduces the information asymmetry and uncertainty of trading that exist in the traditional art market.

3.3. Improve Art and Culture Industry Chains through Combining with Other Industries

The Chinese artwork market is based on the development chain of “creation - exhibition - criticism - market - collection”. The starting point of the chain is the artwork producer and the end is the artwork consumers. With the aim of meeting the needs of consumers, Internet artwork platform and the related platform enterprises operate not only for the single purpose of facilitating artwork transactions, but also for meeting users’ needs in various fields related to artworks. Thus

¹⁶ Coase R H. The Nature of the Firm[J]. *Economica*, 1937, 4(16):386-405.

platform economy has broken the paradigm of economic relations in traditional cultural and art industries, which is along the upstream and downstream of the industrial chains. It also connects the surrounding industries and create new economic growth points.

As for the combination of platform and other industries, usually the platform attracts advertising industry to participate through its information dissemination and display function; by developing the business of classic artworks' duplication as well as the cultural and creative industries, it can bring development opportunities to the traditional manufacturing industry. Finally, the crossover production and marketing can be achieved through development innovation in new business areas such as art education, brochure printing and art museums. There also exist other channels for platform enterprises to break down industrial barriers and improve the industrial chains.

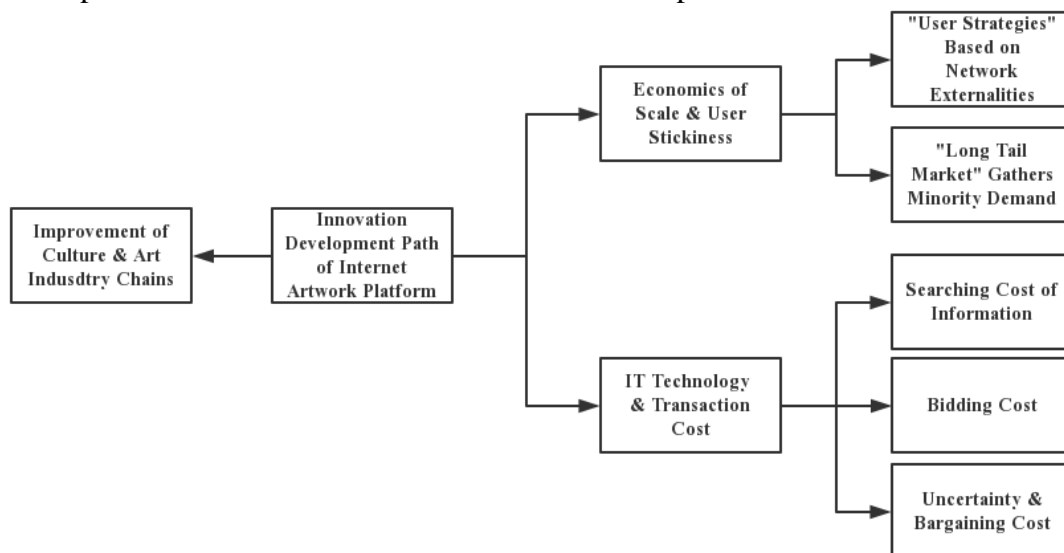


Figure1. The Innovation Development Path of Internet Artwork Platform

4. Artron Art Network-- A Typical Representative of Internet Artwork Platform

Yachang Culture (Group) Co., LTD. (Artron) -- by focusing on the core business area -- “art”, builds the perfect online information platform with the support of IT technology. It grows up from a printing enterprise at the end of the industrial chains into the industry pioneer and industry chain consolidator with “printing + IT + art” as the guiding business mode. “Artron Art Network”, as Artron's “World-Renowned Authoritative Portal of Chinese Artworks”, is an internet-based artwork communication platform and promotes the further interconnect of art. Now it has become the most respected Internet brand in the art world, with more than 500,000 high-grade professional elite members and more than 8 million page views per day, ranking the first in the Chinese art website page views list assessed by ALEXA of the United States. The operation and evolution process of “Artron Art Network” is a concrete embodiment of the innovative development of traditional culture and art industry under the platform economy model, which will be analyzed in detail below.

4.1. “Artron Art Network” exerts characteristic of economies of scale: Pricing Strategies and Personalized Services

Since its establishment in 2000, “Artron Art Network” has successfully built a solid user base through pricing and service strategies at different stages of the platform development, fully demonstrating the significance of scale economy for the development of the artwork industry.

Firstly, the pricing strategy. “Artron Art Network” collects accurate news and auction information of the whole range of art market, connecting the transaction needs of buyers and sellers across time and space, while ordinary users can browse and use relevant information for free. To some extent, this online platform has attracted a large number of “resident” user groups, which is in line with the characteristics of the demand-side scale economy. At the same time, Artron offers “paid membership services”, including “fine view of large picture”, “collection recommendation”,

“Artron index” and so on. In 2003, Artron provided Hanhai Auction Company of Beijing with free autumn auction’s live broadcast, and provided relevant data on flows to the company after the broadcast is completed. This asymmetric pricing method caused by “buyer’s market” enables Artron to accumulate more and more catalog data of artworks and the users of buyer side. Besides, it also leads that sellers such as the “auction house” proactively request to do auction preview and live broadcast through Artron artwork website. Above description just highlights the increasing economies of scale in the Internet artwork platform.

“Artron Art Network” uses big data technology to develop “Artron Art +”, which is dedicated to providing artists with “Artists’ Personal Digital Asset Management” services. The main services include shooting artists’ works through efficient art photography studio, establishing personal digital archives of works, and making personal official website. Apart from this, another service, “Artron Yi-search”, can also facilitate users to search for personalized information. These businesses reflect the core competitiveness of “Artron Art Network”. By gathering and making use of “long tail economy”, it develops niche and personalized market demands, thus promoting the expansion of user groups and the enhancement of user stickiness for the platform.

4.2. “Artron Art Network” Uses IT Technology: Online Auction, Omnibearing Database

The application of IT technology has created an innovative development model, namely online transactions. Compared with traditional processes, the time, space and procedures of transactions are significantly different, which can reduce transaction costs and make resources reasonably allocated.

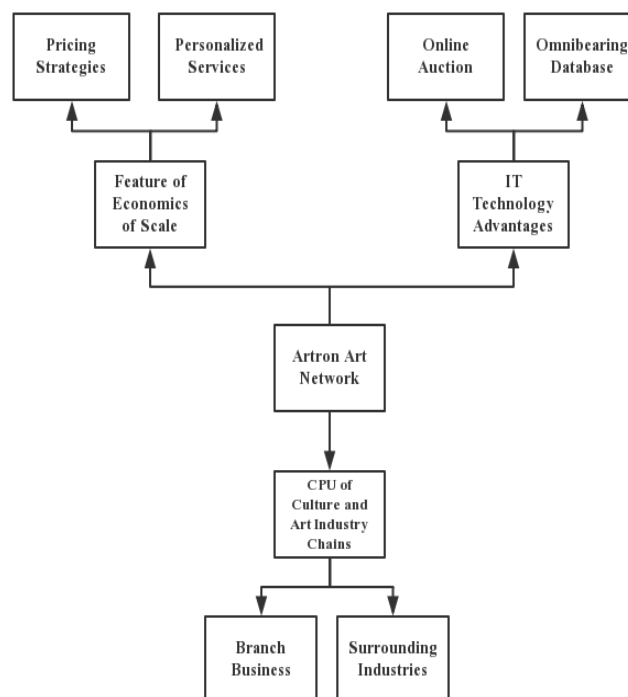


Figure 2. The Operating Model of Artron Art Network

Firstly, taking advantage of the virtual space can reduce transaction costs. In the platform, artwork information is usually displayed by different sections. Through the “auction” channel, users can learn the detailed information of recent auctions and participate in online auctions following rules of deposit and auction. Through the “BBS”, information can be easily exchanged and transaction among artwork lovers can be concluded successfully. On the one hand, transaction costs such as the paper, ink, other graphic and text printing costs, human resources, and venues costs are no longer important. On the other hand, information search costs and bargaining costs are also avoided to a certain extent.

Secondly, the artwork database gathers industry information and facilitates market operation.

Based on business of traditional printing and Internet platform, Artron has accumulated a huge

Chinese artwork image and text database, and on this basis, it innovated “Chinese Artwork Auction Market Information Release System”. Drawing lessons from the securities market, “The Artron Art Market Index (AAMI)” was created, including “Chinese Painting 400 Component Index” and so on. By means of information technology, Artron summarizes and displays the industry development situation, mitigating the problem of asymmetric information. Because of the existence of Artron and the data support provided by it, art creators, investors and the intermediaries can all play a more effective role in the artwork market. Participants also gained an indicator for prediction of future market’s development.

4.3. “Artron Art Network” Integrates Culture and Art Industry Chains: Develop Printing, Artwork Reproduction and Other Related Industries

Just as Artron’s business model indicates, “serving art of the people and art serving the people”. Ever since the establishment of the company, Artron has been keeping “art” as its operation core, integrating and improving the industrial chains of culture and art, and providing comprehensive value-added services for the public. Artron is committed to becoming the advocate of “Art, Fashion and New life”, taking “Art + Humanity, Art + Fashion, Art + Space, Art + Life” as the main clues, adhering to the development path of “Cultural Creativity, Scientific and Technological Innovation”, and striving to make art enter everyone's life.

On the one hand, at each node of the industrial chain, Artron has designed the corresponding branch business. For artists who are in the upstream of “producing artworks”, Artron provides “personal digital asset management” services, and redevelops these artistic assets, such as cooperating with publishing houses to launch art books and CDS, reprinting, and holding personal exhibitions, so as to obtain relevant income. For the auction houses in the middle of the industrial chain, Artron provides online preview services and album printing services. Finally, “Yachang Crafts”, a subsidiary brand, was specially designed for the consumers of artwork in the downstream part. Using the full size digital scanning technology, the famous works of art can be copied, including official porcelain in the Ming and Qing dynasties, western classical oil painting, Chinese ancient and modern painting and calligraphy, this subsidiary brand is making art a “necessity” of life which ordinary people can also afford.

On the other hand, Artron also develops an online and offline “Mobile Art Gallery”, in which art lectures and practical courses will be held on a regular basis. It develops a series of fine art products and service series, such as “artwork derivative customization”, “study customization”, “art activity customization”, to enhance the service scope and crowd stickiness. As a result, Artron has opened up all sections of the artwork industry chains and connected with surrounding industries, such as traditional manufacturing industry, publishing and printing industry, construction industry, service industry, etc. Through its operation and development process, Artron makes quantities of economic growth points effectively combined, continuously magnifies the externality of the art industry, and contributes to the inheritance and transmission of Chinese culture.

5. Conclusion and Prospect

From the perspective of platform economics, this paper analyzes the development and research status of platform economics as well as artwork industry, and puts forward the idea and operation mechanism of Internet artwork platform's innovation of traditional culture and art industry’s development path, taking “Artron Art Network” as an example. The network externality of Internet artwork platform endows it with the characteristics of economies of scale effect and long tail economy of both supply and demand sides, which can effectively enhance user stickiness. With the support of IT technology, the Internet artwork platform can reduce the cost of artwork transactions, and also change the time and space of transactions profoundly. As the CPU of the culture and art industry chains, through the integration and connection of different sections, the online platform has become an expansion and further development of the traditional art industry, which is conducive to the improvement of the whole market system.

There still exist many deficiencies in this paper. Firstly, the common characteristics of the

operation mode of Internet art platform are still not summarized comprehensively enough. Secondly, it failed to reach a definite conclusion on whether the artwork platform should be specialized or diversified in the main business of artwork subdivision field. Thirdly, the research on the application of economic theories such as bilateral market pricing in the Internet artwork platform is still not deep enough. These are the main focuses of future research.

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