Sentimental Analysis for improving the standards of Digital Ticketing Platforms in China

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Abstract. This articlel focuses on digital ticketing platforms and tried to understand how they impact the industry. Empowered by big data, ticketing platforms are upgrading and now we are able to connect the needs of producers, theatre operators and the audiences. Therefore, we can dramatically empower the industry with data. This research is based on the investigation into numerous ticketing platforms of live entertainment within China, professional experience as Theatre operators and producer for almost 20 years, interviews of theater managers of nearly 40 venues in and outside China, and detailed analysis of China's performance ecosystem. This research would be referred when theater managers look at transforming their working strategy, work planning inside the theatre and work analysis through digital ticketing platforms. Digital platforms are steadily involving to the business ecosystem of this industry. The first part will be discuss about basics of China's ticketing platform, audiences and transformation to digital platform, its function, impact and features.The recommendation system can be involved in numerous films, film related characteristics, including genre, director, actors, and more, to offer consumers individualized options. Demographic filtering, Culture based data can be identified through film-based data such as stars, directors, and budget's popularity rather than the user's interests. The author aims to bring families back to movie theatres, finding out online or digital feedback system to improve the booking in digital platform utilization. Authors wanted to spread more and easier digital payment system for the regular customers to the theatres. This not only going to reach the Movie based theatre, but also like to extend to cultural drama or art-based theatres.

Keywords: Digital ticketing platforms, Performance ecosystem, Strategy transformation, Sentimental Analysis.

1 Introduction

Online Movie Ticketing Services Market size was valued at USD 20.05 Billion in 2022 and is projected to reach USD 29.42 Billion by 2030, growing at a CAGR of 5.32% from 2023 to 2030.

The increasing technological advancement is one of the key factors driving the growth of the Global Online Movie Ticketing Services Market. The increasing utilization of smartphones and rising use of the internet further boost the growth of the market over the forecast period. The Global Online Movie Ticketing Services Market report provides a holistic evaluation of the market.

An online movie ticketing service is a digital platform that allows customers to access the services of a business, buy tickets, and reserve seats for the movies. It provides details such as what time a movie will be played, movie previews, what seats are available, and so much more. Along with movies tickets bookings, this platform allows peoples to watch trailers, view show times, and see reviews of the movies. Online movie ticketing services platform allows booking tickets for movies, theaters, activities, sports, fan hood, concerts, workshops, dramas, and plays.

The ticketing system for China's live shows emerged and evolved along with China's E-commerce. With internet reaching all corners of our life, people no longer buy tickets from theatre box offices. Rather, they have shifted to mobile Apps, where they could browse and select whatever shows interest them. The performance industry features a supply chain that is purely driven by customers, in this case, by audience. The production of a show as well as the operation of a theatre hinges largely upon the preference of its audiences.

Ticketing platforms for live shows in China have gone through three stages. At the very beginning, ticket sales relied largely on human sellers who sell the tickets to their friends. So in those days ticket salespersons need to possess a very thick "phonebook". These salespeople were largely scattered geologically. They manually deliver the ticket to customers three to five days in advance. As a customer back then, you could hardly return the ticket you just bought. And if the show was about to go on stage, let's say, in one or two days, you probably have to buy it from the box office of the theatre.

The second stage is from the 1980s to the end of the last century. With Personal Computers and the Internet entering many households in China, the way of ticketing changed dramatically. E-commerce started to emerge as well as professional ticketing agencies. China started to have computer-based ticketing systems, which helped expand the sales channels for sponsors, and also brought much convenience to the audience. Most importantly, it ended the many difficulties and problems confronting traditional box offices.

Then in the last decade, ticketing in China entered into the age of being smart. In the performance industry there also emerged the Smart Theater management model. China right now is still developing fast on this trajectory. In the current stage, one has to understand the three very important elements of digital ticketing, namely traffic, users, and data. For ticketing platforms, they need to strengthen traffic management based on their business needs; they need to formulate a membership retention strategy that supports delicacy management; they also need to collect data and set up a data model according to their needs. So, in the age of being smart, C2M is playing a more obvious role in driving the ecosystem forward. Marketing is also empowering sponsors and theaters based on data. In the meantime, ticketing platforms are improving their closed-loop management against the backdrop of "internet for entertainment".

2 Literature Review

Ticketing magazines and journals first appeared in Japan in the 1970s, they mainly sell movie tickets and performance tickets. In 1984, ticketing via telephone became popular in Japan, Singapore, Korea, the US and the UK. People book ticket on the phone and the claim it from box office, which at the time was very convenient. Driven by growing market needs, ticketing firms improved their service and some went online, then went public on the stock market, such as Japan's PIA, Singapore's SISTIC and Korea's Interpark. These platforms don't limit their business in the scope of show tickets, they also cover tickets for tourist sites and sports. Some of these services transcend their national borders. To just give you an example, the tickets for shows in China's Macao are exclusively sold by a Singaporean ticketing company. With competition becoming fiercer on the global ticketing market, small companies which focus solely on ticketing have either gone bankruptcy or been acquired by large, professional companies.

In China, large ticketing platforms are embracing with the internet, and are improving their closed-loop management. There are currently three ticketing giants in China: YL, Damai and Piaowutong, which were founded in 2003, 2004 and 2008 respectively. In Beijing, these three services jointly account for more than 70% of market share. The three giants are using the internet to improve their closed-loop management. Damai has shifted to "local life" and is focusing on live shows in different localities. YL is focusing on IP development and the performance industrial chain. Being a subsidiary of CPAA Theatres, Piaowutong is focused on horizontal development.

With the development of the Internet, the performance ecosystem has changed. Digital ticketing platform as a digital product has become part of the ecosystem, and has left a positive impact on the whole industrial chain, in the meantime it has made investors more impetuous. What are the elements on this industrial chain? We have producers, marketing agencies as well as theaters. Producers are perhaps the only part that is not likely to be empowered by data. No one can guarantee that with the support of data, producers can create arts that are bond to make money. Despite the fact that data can help identify the trending topic, the targeted audience and the most popular performer whose fans will for sure go to the theatre, the production process contains much uncertainties ranging from the script, director, stage arts and the quality of performers. That's why data is not likely to empower the artistic creation, but rather it empowers the building of a smart theatre, marketing as well as ticketing. That being said, data can be some sort of "reference" to artistic creation.

As an important hub, digital ticketing platforms are connected to artistic creation, marketing and sales, and even in-theatre services. Therefore, by processing the data from the platform, one can enable model design that is based on customer needs, and provide some reference to decision makers of a theater. There are two internet giants in China, Alibaba and Tencent – both have put forward the strategy of "Great Entertainment" in the past five years. Alibaba's strength lies in E-commerce whereas Tencent enjoys competitive edges in gaming. With rapid social and economic progress, live entertainment has become an integral part of cultural consumption and a new driving force of the economy. These two giants are shifting offline and are grasping with the opportunities offline for the live entertainment business. Both companies have a E-ticketing

portal that transforms the ticketing platform into a digital product, pushing offline members online.

In 2016 Alibaba set up the Great Entertainment Business Unit, and after investing in Damai, Alibaba entered the performance industry. Damai was established in 2004 and is a leading service provider in China's live entertainment sector, covering concerts, drama, musicals and sports. In 2014, Alibaba bought 32.44% of Damai's shares. In recent years Alibaba has expanded to the music, video and movie industries. Since acquired by Alibaba in 2017, Damai has helped improve Alibaba's offline presence, and served as a key link connecting Alibaba's online and offline business. While consolidating its existing business, Damai quickly expanded to cover the whole industrial chain such as contents, theatres and ticketing, serving customers from all angles and in all aspects. Damai has significantly upgraded Alibaba's business presence in the entertainment industry as it delivers services through both its online and offline channels.

In as early as 2015, Shanghai Grand Theater had reached an IT cooperation agreement with Maizuo, a sub-brand of Damai which specializes in hardware solutions for performance venues. By partnering with Maizuo, Shanghai Grand Theatre built a new generation of "Theatre Operation and Management System" that covers ticketing, membership, project management, marketing, channel operation and accounting. The new system solved many pre-existing problems such as lack of sharing for ticketing data, lack of flexibility in terms of marketing strategy, and manual accounting and calculating. The system helped build a vertical layout covering proprietary channels, E-commerce platform, ticketing platform as well as mobile apps, and has also made it easier for customers to buy tickets.

In July 2018, Shanghai Grand Theatre worked with Alibaba's TMall, China's most popular online shopping site, and jointly opened a flagship store for the theatre on TMall website, focusing mainly on performance, arts, culturally creative products and fashion. In August 2018, Alibaba worked with Shanghai Grand Theatre for a "smart theatre" program. The two reached strategic partnership in theatre operation and management, smart theatre construction, cross-sectoral marketing and IP ecosystem. By using such technologies as cloud computing, big data and Artificial Intelligence, the two are jointly incubating IPs, developing and producing new shows, and exploring fresh artistic forms and innovative shows. In the meantime, Damai is making full use of Alibaba's various tools such as Alipay, Tao Ticket and TMall to collaborate with Shanghai Grand Theatre in venue business, show IP, member rights, AI, cloud computing and the Internet of Things. In so doing they are jointly promoting the integrated development of the Internet, cultural and entertainment and new media, thus maximizing the social and economic benefit of the collaboration. They synergy formed between Damai and Alibaba is even more crucial. Alibaba Music first connected all its business data with Damai, and quickly formed a marketing model consisting of fans, artists and the platform, in so doing Alibaba's presence in music has been greatly enhanced. At present, Alibaba has included Damai, Ali Movie and Tao Tickets in its Local Life business section, which has upgraded from Business Group, a business group to BU, a Business Unit, covering local services online.

Compared with Aliababa's E-commerce, Tencent enjoys an advantage in converting gaming IPs into offline shows. Tencent has a different "Great Entertainment" strategy, but like Alibaba, it covers music, literature, online video streaming, micro-videos, content production, online ticketing and content investment. However, Tencent is mainly underpinned by four business units: animations, books, movies and games. Tencent Cartoon and Tencent Literature incubate

IPs, and Tencent Movie and Tencent Cartoon produce animations, movies, online soap series, etc. With Tencent's many distribution channels, Tencent Movie further incubates these IPs while Tencent Game and Tencent Movie are able to commercialize these IPs. In 2018, Tencent formulated a strategy of "New Entertainment", aiming at building a new culture production model centering on IPs. In so doing, Tencent wishes to cultivate a number of influential Chinese cultural labels across the world.

Another very important player for Tencent is Maoyan Entertainment, originally the Entertainment Business Department of Meituan.com in 2012, Maoyan mainly specialized in online movie ticketing. In 2017 Maoyan expanded to ticketing for live entertainment shows. In 2018, it secured the exclusive ticketing right for Jacky Cheung's concerts, pushing its live entertainment ticketing revenue to 2nd on the rank. In 2019, Maoyan released its "Full Entertainment" strategy, focusing on ticketing, product, data, marketing and finance. In the meantime, the "Tencent-Maoyan Alliance" was officially launched, the two parties engaged in full collaboration in music, video, game and cloud. They will share and expand traffic data, build a membership-connect system for consumers, and integrate their resources for a smooth, connected industrial chain for live entertainment. Like Damai, Maoyan has two product platforms: Movie Everywhere, and Venue Everywhere". The firmer covers all processes of movie making such as concept development, production, marketing and cinema playing, and the latter provides software services and smart on-the-field services to cinemas and live entertainment venues. But in general, Maoyan's advantage at present still lies in the movie industry.

The live entertainment industry is one that entails online-offline integration, and the fastest way of doing that is by deploying quality contents in offline channels. Tencent has made some meaning offline explorations with its IP strength. In October 2010, the game Honor of Kings was converted into the King's Music Gala. In 2019, Tencent started to further convert the game into a musical. Currently the program is well underway and Tencent is working together with Poly Theatres, which is a professional theatre operator and runs the largest number of theatres across China. Beijing Poly Theatre Management Company now runs 67 theatres and in 2016 it developed its own online ticketing platform – Beijing Poly Ticketing Company, which covers ticket sales, marketing and planning, membership service and artistic education. The platform serves theatres, troupes and producers on the business side, and aims also to become the most influential ticketing platform for customers. By partnering with Poly Theatre, Tencent will connect through resources on both the business end and customer end, which will empower even greater online-offline conversion.

3 Methodology

On the business front, ticketing platforms should provide more effective services to sponsors by offering data analysis and data management, and by empowering show marketing and sales with a better commission-sharing plan. They can also work out a marketing plan tailored to various content members. On the other hand, with the huge amount of data they have, they can improve the operational management of theatres. Ticketing platforms can offer better pricing management according to the changing supply and needs, they can also build smart theatres and help convert more offline customers into online members. Theatre operators can attract the

sponsors by showing the count of the customers in the theatres digitally and book the sponsors for the show immediately. Same time the Theatre operators and managers can accompany the count of the employee to the theatre based on the day, movies, time and so on. Figure 1 shows the immediate use of the Digital Ticket Booking platforms flow understood by a Theatre Manager. So Theatre Operator, Producer, Audience, Regional Distributor will have different perception on the Digital Movie Ticket Booking platforms.

On the customer front, these platforms have to constantly optimize the Customer Relationship Management system for members. They can remove the online barriers blocking members linking to other platforms, and work out a conversion mechanism that increases customer loyalty. By utilizing the overlaying data between various platforms, they should analyze the shopping behavior of members and achieve life cycle management, identify potential members and increase recurring purchases. Very importantly, when these ticketing platforms help a theatre do marketing, they should dig into the gigantic amount of information buried behind data, and cultivate customer loyalty by converting them from online to offline, and in the meantime, achieve the upgraded transformation of the ticketing platforms.
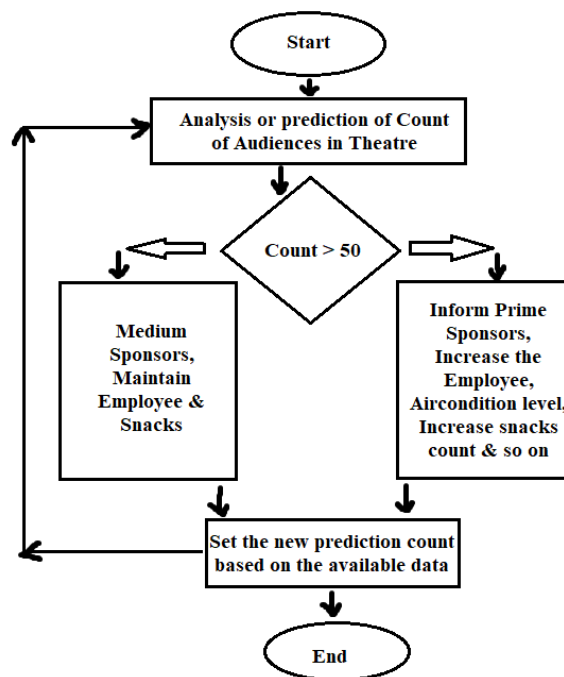

Fig 1. Flow chart of the Digital Booking platform utilization in Theatre

The study relied on Recommendation and Analysis System for the Theatre Operators and Theatre Managers using Sentimental Analysis from the previous data available from the users, Producers, Regional Distributors, Theatre employee and Audiences.

• Based on Gender and Age

Depending on the user's age , gender, and interests, movies are suggested. In this way, selecting a movie is convenient for the user.

•   Based on Star Artists and Music

For better or worse, music-related films help to humanize rock gods and hip-hop pioneers while also contributing to the legends of these facts, regardless of whether the artists they portray have their official seal of approval or the films are simply the guesses of someone with cameras and a budget.

•   Based on Movie Review

Users can provide feedback on the film by rating it or leaving comments. Favorable and unfavorable remarks can be filtered out by the other user who is viewing the comments.

•   Based on Movie watching counts

Additionally, it doesn't take into account a popular director or actor's or actor's fan base, which explains why some people watch lesser-known films with less popular actors and directors, because of the storyline.

•   Based on discounts for snacks and Beverages

Get your favorite snacks and beverages delivered inside the theatre now at a discounted price.

•   Based on offers in Ticket booking

The risk of booking tickets for a popular movie probably sold out is very high. To avoid such risk, If offers are provided by the theatres such as within 24 hours after a successful transaction, the maximum cashback amount that can be credited to the account and the Promo code is only valid while a certain minimum quantity of reservations are made. such offers encourage online booking more interesting.

•   Based on days filled for movie

The theatre will be occupied by the seat counts for every show, the ticket count being booked will form a curve. Every day the curve changes will occur, we can use that as an indication for the applying new movie in the queue.

•   Based on Theatre size and review of the Theatre

The theatre will be occupied by the reviews given by the audiences. Same movie will be shown in different theatres in the city, the audiences will choose the theatre based on location, cleanliness, seats, sound and visual experiences, staff behavior, parking area and community gathered there to watch the movie in there.
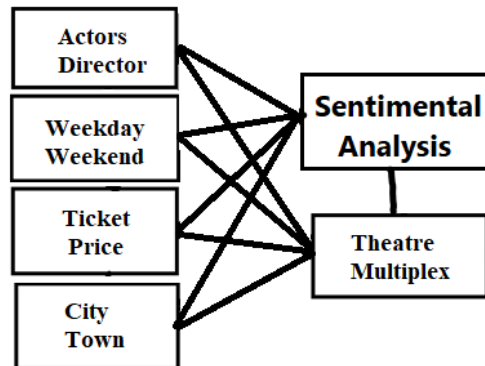
Fig.2 Sentimental Analysis associated with Theatre, Actors, Weekday, Ticket Price and place.

So the study got lot of opportunity to do sentimental analysis from the data collected in the theatre, movies, actors, audiences, city, price and so on. We try to have perception of the Digital ticket platform into sentimental analysis, to know the terms or factors related to the theatre operators, managers, producers, audiences and Film Industry.

If time permits we would like to impose the research for the disadvantages such as Internet Access, Influx of New Customers, Booking Systems ecosystem, Security Concerns, Lack of Personal Touch and Additional Charges applied in the Digital movie booking system.

4 Results and Discussion

Large ticketing platforms in China are utilizing the internet and enhancing closed-loop management. YL, Damai, and Piaowutong, which were established in 2003, 2004 and 2008 consecutively, are the three largest ticketing companies in China at the moment. These three services collectively have more than 70% of the market share in Beijing. The internet is being used by the three industry titans to enhance closed-loop management. Damai has switched to "local life" and is concentrating on live performances in various communities. YL is concentrating on the performance industrial chain and IP development. Piaowutong, a division of CPAA Theatres, is committed to horizontal growth.

Main factor which destroyed the movie theatre culture was covid pandemic. The author also witness the prices of the theatre shall be revisited after the feedback and analysis from the theatre managers, producers and audiences. Families stopped visiting theatres to watch Chinese Movies.

Some Movie ticketing apps are highly supporting by some movie production companies concentrate encouraging only their production movies in high scale. Even though this brings advantages for the theatre but destroying the ecosystem of the movie distribution.

So, the Study Aims to find out the parameters involving in finding the Digital Ticket booking issues and improving the Digital Booking platforms for Movies in China. Influenced by European Sports Ticket Booking and Implementing in China

For the current in Digital Ticketing platforms, we can use Sentimental Analysis and correlation methods to Blockchain stores information chronologically in a decentralized peer-reviewed database on thousands of computers globally. Purchasing a ticket via blockchain is the same experience as ordering a 'normal' mobile ticket except there is no paper ticket instead the fan gets a mobile ticket. In 2018, UEFA started trials with the technology together with Olympique Lyonnais and Wembley Stadium. In addition, the technology has been used during several Europa League, Supercup and UEFA Nations League matches using KNVB.

Standing against the OTT

According to studies, 400 movies are released on average each month around the world. The high-budget films will engage in marketing and audience outreach. The low-budget films, however, do not succeed. There are several low-budget films that bombed at the box office but found popularity after they were released on streaming services. The mechanism for suggesting movies is what many OTT platforms like Netflix, Amazon Prime, Hotstar, etc. utilize.

In the future, the competition in the live entertainment industry will still lie in contents. We need to regard ticketing platforms as a digital product, and use it to empower the whole ecosystem of the performance industry. On the one hand, a synchronized B+C ticketing and marketing system has to emerge to bring about professional operation on the Business side, and increase purchases and loyalty on the Customer side through more accurate customer segmentation. On the other hand, by designing more interactive functions, these ticketing platforms can help break through the blocks on the industrial chain and provide more meaningful data for the reference of artistic creation. With these interactive functions comes also more meaning integration of marketing resources, eventually this will help expand more opportunities. Last but not least, more development space can be explored if we embrace the deep correlation between "culture plus" and "internet plus". Theatre managers should try to build the theatre into a cultural landmark of a city, and by breaking the barriers within the industry, leveraging the potential of cultural financing and big data, and through synergized development of various entertainment businesses, more out-of-the-boundary revenue can be harvested.

5 Conclusions

In summary, the impact of digital ticketing platforms in China's entertainment industry is undeniably transformative. These platforms, armed with the wealth of big data, serve as crucial intermediaries meeting the intricate needs of producers, theater operators, and audiences. This transformation is profound, revolutionizing the industry by leveraging the potential of data analytics. This article draws its strength from a comprehensive study of various ticketing platforms in China, backed by nearly two decades of experience as theater operators and producers. Additionally, it benefits from illuminating interviews with managers from around 40 venues within and outside China, as well as an in-depth analysis of China's dynamic performance ecosystem. The insights gleaned offer invaluable guidance to theater managers striving to enhance their strategies, work planning, and performance analysis through the prism of digital ticketing platforms. These digital platforms have seamlessly integrated themselves into the entertainment business ecosystem, not only revolutionizing ticket sales and access but

also reshaping how audiences engage with their favorite content. The impact of digital ticketing extends beyond movie theaters. As explored, recommendation systems can rekindle interest in cinemas and improve the digital booking experience. This transformation isn't confined solely to mainstream cinema; it has the potential to extend to cultural and art-based theaters, enriching the offerings for diverse audiences. In essence, digital ticketing's evolution mirrors the broader digital revolution in the entertainment industry. With data-driven precision, personalized recommendations, and streamlined payment methods, it is poised to redefine how audiences experience and engage with live entertainment. As the industry continues to evolve, digital platforms will play an increasingly prominent role, delivering a more immersive, accessible, and engaging experience for all stakeholders.

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