

Research on Profitability Strategies of Online Audio Platforms in the Context of AI-Enabled Era - Case study of the Ximalaya

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Abstract. The AIGC model has been widely used in the content production industry in recent years. Chinese online audio market is heavily influenced by the development of AI technology. At the same time, in the past decade, many Chinese online audio platforms have been facing the problem of high content costs and difficulty in achieving profitability. Therefore, it is of great significance to study the profit model of online audio platforms. This study analyses Ximalaya's profitability strategy in the context of the AI-enabled era. It is based on a literature review, case studies and data analysis. Besides, Ximalaya's business logic, profit model and profit strategy are comprehensively analyzed in this study. This study finds that Chinese online audio platforms, represented by Ximalaya, already have relatively complete profit strategies and industrial chains. However, the use of AI in online audio platforms is still in the very early stages of development. Online audio platforms are increasingly utilizing AI technology to improve platform operations, resulting in cost savings and increased efficiency.

Keywords: Ximalaya FM; AIGC; profitability strategy; online audio platforms.

1. Introduction

China's online audio market has experienced rapid development with the rise of the 'ear economy'. The online audio platforms in China are experiencing a continuous increase in new users. Since 2015, the number of online paid knowledge users in China has increased from 48 million to 477 million in 2021. The '2023 National Listening Trends White Paper' reports a significant increase in the number of audios available on online audio platforms. Specifically, the number of audios has increased 135-fold since 2016 and 9-fold since 2020 [1]. Meanwhile, in recent years, various industries have been swept by a new generation of generative artificial intelligence technology. Chinese online audio platforms, such as Ximalaya, are exploring new development directions for the industry by integrating AI voice generation, recognition, and intelligent interconnected device technologies.

Ximalaya is a comprehensive audio platform. Its audio offerings include podcasts, audiobooks, audio drama shows, live streaming, education programs, and audio comics [2]. After 10 years of continuous losses since its establishment, Ximalaya finally achieved profitability in the fourth quarter of 2022. At the same time, the number of Ximalaya's monthly active users (MAUs) increased from 284 million in Q4 2022 to 345 million in Q3 2023.

Although Chinese online audio platforms have grown rapidly, they have been facing difficulties in achieving profitability all the time. Currently, previous research has shown some studies about the conventional profit model of online audio platforms in China. However, there is a lack of research on how AI technology can help online audio platforms achieved profitability. Therefore, research on this issue is of great importance in helping Chinese online audio platforms formulate profit strategies. This paper focuses on Ximalaya's profitability strategy in the context of the AI-enabled era. This study uses case studies, data analysis, and literature review to provide an in-depth analysis of Ximalaya's business logic, profitability model, and profitability strategy. This study aims to explore the direction of profitability strategies in Chinese online audio industry, therefore providing new perspectives and ideas for subsequent research.

2. Ximalaya's User Analysis

Ximalaya is popular among users of all ages. The core users of Ximalaya are mainly between the ages of 26 and 35. This group tends to be a pan-intellectual group with high consumption power [3]. The platform has also attracted a number of older and middle-aged groups in recent years. Besides, first- and second-tier cities are the main areas for listening to audio content. Users in these areas tend to have higher levels of consumption and awareness of paying for knowledge [3]. Meanwhile, Ximalaya's user gender is relatively balanced, with 52% male and 48% female. This is conducive to attracting new users for Ximalaya [3]. In the meantime, the users of Ximalaya have diverse listening purpose. Ximalaya's 2023 White Paper on National Listening Trends reveals that relaxation and decompression are the primary reasons for users to listen, followed by passing time, emotional companionship, learning enhancement, and information acquisition.

3. Ximalaya's Business Logic

The industrial chain of Ximalaya comprises three levels: upstream, middle, and downstream, each of which involves multiple participants.

The upstream content supply chain of Ximalaya is complex and decentralized, involving audio creators, copyright owners, and other participants. Upstream, content rights holders sell audio adaptation rights to Ximalaya. Audio creators mainly produce audio content through three modes: user-generated content (UGC), professionally user-generated content (PUGC), and professionally generated content (PGC). Through these approaches, creators produce audiobooks, recorded lessons, podcasts and other programs eventually.

In the midstream, Ximalaya serves as a platform to connect listeners with content producers. The content produced is placed downstream through the Ximalaya platform. In this process, Ximalaya utilizes AI and big data to empower the platform's overall operations, content production, content auditing, marketing, and user services.

The listener-user, acting as a content consumer, is the most important role downstream. Users subscribe to a variety of audio content on the platform to satisfy their entertainment, learning and other needs. There are many channels for users to listen to content, including smartphones, smart speakers, smart homes, smart cars, etc. Simultaneously, the platform encourages users to interact with other users and audio creators to form communities.

4. AI Technology Empowers Online Audio Platform Business

AI technology has been gradually applied to the online audio industry over the past few years. On the one hand, AI technology is used to enhance the operation and management efficiency of the platform [4]. For example, at Ximalaya, AI technology has been applied to the review process, which significantly reduces labor costs and improves operational efficiency.

At the AI+IOT level, Ximalaya cooperates with smart car manufacturers to build the Internet of Vehicles. Ximalaya also cooperates with home appliance companies to create intelligent IOT homes, such as the AI smart speaker "Xiao Ya".

AI technology is also used in the online audio production chain. The approach improves the efficiency of content production and reduces labor and material costs [4]. With the introduction of AI technology, Ximalaya has added an AIGC model to its content production. Ximalaya has invested a great deal of effort in the field of speech synthesis technology by establishing the Intelligent Speech Laboratory [5]. This lab focuses on research into speech recognition, speech synthesis, signal processing, coding and decoding, and intelligent sound effects [5]. By using its intelligent voice lab, Ximalaya generates AI anchors. Then, Ximalaya's copyrighted content is turned into audio by AI anchors. Finally, the content is uploaded through the Ximalaya AI anchor account. As a result, the "content supply - AI anchor production - platform distribution" production chain was born [6]. For example, Ximalaya

synthesized the voice of deceased storytelling master Shan Tianfang through AI to produce the "Shan Tianfang Voice Reproduction" series. This series now has more than 100 albums on line, with more than 100 million plays. It has become a representative work of online audio AIGC.

Even though Ximalaya has a large number of anchors, the quality of the anchors varies. Moreover, it is difficult to boost productivity of content production due to limited human production capacity. Ximalaya's AI anchors are significantly more efficient in terms of output in comparison with human beings [3]. In the podcasting field, editing audio used to be a time-consuming and labor-intensive process. Ximalaya launched Cloud Clip, an AI audio tool that combines smart volume, smart music, speech-to-text, AI segmentation, smart recognition and other smart functions. With AI audio tools, users can tap into the power of AI to edit, create, and enhance audio in different ways with ease [7]. The tool significantly alleviate barriers to podcast content creation and improves creation efficiency.

As shown in Figure 1, the majority of creators have a positive attitude towards the addition of AI technology. According to the '2023 National Listening Trends White Paper', 61.5% respondents argued that the application of AI technology promotes to save time and improve the productivity. Besides, half felt that it also helped to improve the quality of their work. In addition, AI was also considered helpful in creative creation and effect production.

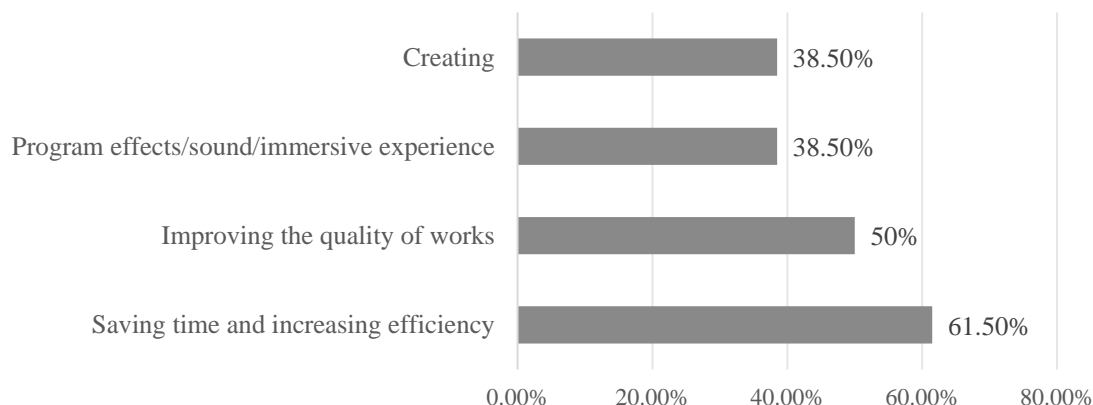


Figure 1. Feedback from creators on the value of AIGC

Overall, AI technology is beginning to be applied to platform management, content production and other aspects. As a result, Ximalaya has both reduced costs and created more possibilities in the content area.

5. Ximalaya's Profitability Strategy Analysis

Ximalaya has formed a relatively perfect and diversified business model after years of development. Additionally, revenue and cost are essential components of the business model. Therefore, sorting out Ximalaya's cost structure and revenue sources is beneficial for studying its profitability strategy.

5.1. Cost Structure and Revenue Sources

Ximalaya's costs come mainly from revenue sharing, copyright maintenance costs, labor costs, and content production costs. Among them, the revenue share to creators constitutes its main operating costs. Revenue sharing accounts for 60% of operating costs in 2021Q1. Therefore, how to reduce costs has become one of the key influencing factors for Ximalaya to develop its profitability strategy.

Ximalaya's main sources of revenue include content payment, advertising, hardware sales, copyright distribution, festival promotion, and so on. Among them, the most important ways of realizing revenue are subscription revenue and advertising revenue. Data from the Ximalaya platform shows that user payment awareness has increased significantly in recent years. From 2018 to 2021Q1, Ximalaya's user payment rate showed a rocketing trend, increasing from 2.7% to 12.8% [3]. By the end of 2022, the number of paid albums increased by 24% year on year.

5.2. Key Profitability Strategies

Profit model in the online audio industry usually contains subscription payments, advertising, and innovative business [8]. Ximalaya's profitability strategy is multi-faceted, including cost reduction, subscription acquisition, advertising acquisition, product sales, and other approaches. It achieves profitability in a multi-directional manner.

Ximalaya uses a festival-based promotional strategy. In 2016, Ximalaya launched the annual "123 Knowledge Carnival". During the carnival, users can get a lot of discounts on Ximalaya-related products. Meanwhile, Ximalaya encourages users to share offers and content with friends. According to Ximalaya's "123 Knowledge Carnival Content Consumption Trend Report", the sixth "123 Knowledge Carnival" in 2021 saw a 110% year-on-year increase in membership purchases. Besides, on December 1st, 2023, more than 120,000 people made reservations for half-price annual passes. This strategy is an innovative initiative by Ximalaya within the online audio industry. Through social fission marketing, Ximalaya's brand awareness was increased and its user base was successfully expanded. At the same time, it gained revenue growth and market share expansion.

Ximalaya has adopted a paid subscription strategy. Its payment model is embedded "Paid Picks" [9]. User subscription systems include membership purchases, album subscriptions, course purchases, etc [8]. Through quality paid content, Ximalaya manages to attract a large number of users to pay for subscriptions. Ximalaya has collaborated with many content creators and organizations to launch a huge amount of exclusive, high-quality audio content. Meanwhile, Ximalaya offers different types of audio programs for users of different age groups. On this basis, Ximalaya charges for some premium PGC, PUGC and exclusive IP content. For example, the Chinese audio works of Harry Potter, after selecting voice actors, customized special effects music and other steps, were carefully crafted to launch, thus attracting a large number of users to subscribe [4]. Ximalaya's user payment rate has shown an increasing trend since 2019. This is closely related to the continuous refinement of audio content, which attracts users to pay for high-quality content and experience. The subscription payment strategy is an important support for Ximalaya to achieve sustainable profitability, and also helps to promote the healthy development of the content ecosystem.

Ximalaya uses a fee-based training strategy. Its Hippodrome Education has been successful in attracting a large number of anchors to pay to enroll in training courses. In 2023, Ximalaya also launched the "new voice program", "podcast +" and other projects. Most anchors say they are willing to take Ximalaya's fee-based training if it's at reasonable prices. Upon completing the course, the trainees return to the Ximalaya platform to produce audio content. This strategy promotes a virtuous cycle of transformation between users and creators, ensuring the continued vitality of the platform.

Ximalaya has generated significant advertising revenue by attracting investment from advertisers. There are three types of advertisements on the Ximalaya platform. The first one is display ads such as banners and focus images. The second one is the audio patch format. The third is implanting ads into audio programs or customizing exclusive programs for brands. In recent years, Ximalaya has also begun to use AI technology to optimize the strategy and format of its placements. The ads generate a steady stream of revenue and enhance the image of Ximalaya's brand.

Ximalaya aggressively expands to other platforms and successfully attracts a large number of mid to high-end users to pay for hardware products. Ximalaya produces a series of smart speakers and smart wearable devices equipped with AI technology, such as 'Xiaoya Nano' speakers, smart glasses and so on. These smart devices are deeply connected to Ximalaya's audio resources. Ximalaya has also partnered with smart home and smart car companies to introduce features such as in-car audio. Ximalaya has partnered with more than 80 car brands and serves more than 90 million car owners. High-paying car owners provide Ximalaya with a large amount of hardware revenue. Hardware production and sales leverages its strengths in content ecology and hardware development. In this way, Ximalaya achieves product innovation and differentiation, as well as deep integration of content ecology and hardware, thereby increasing its competitiveness in the market.

5.3. Profitability Strategy Strengths and Weaknesses Analysis

5.3.1. Strengths.

Ximalaya has a diversified Profitability Strategy. This gives Ximalaya a strong ability to cash in on multiple channels. Ximalaya's profitability relies on three main methods: content revenue, membership subscription revenue, and traditional advertising revenue [10]. It also includes hardware sales, fan economy and other ways of profitability. The diversification strategy provides Ximalaya with the possibility of realizing cash through multiple channels.

Ximalaya has successfully achieved cost reduction and efficiency through the technology-driven approach. In the upstream, Ximalaya deploys cutting-edge technologies such as AI and Big Data to reduce labor costs and improve efficiency. In the midstream, the platform operating costs are cut down. In the downstream, these technologies are used to attract users to subscribe and pay.

Ximalaya effectively manages the relationship with its users. Users have a strong sense of payment. Ximalaya has both the layout of mainstream content and the effective management of niche subcultures. Its user base is solid in the paid content market [11]. At the same time, Ximalaya has set up a series of targeted knowledge payment system, including boutique programs, low-priced areas, single episode purchase of three categories and membership, etc., which provides customers with differentiated services and attracts users to pay for upgraded services [12].

5.3.2. Weaknesses.

By positioning itself as a comprehensive online audio platform, Ximalaya blurs its track in the market. This leads to the loss of some high quality creators, which hinders the production of high quality content [13]. This, in turn, leads to the platform's inability to meet the diverse content needs of users.

Ximalaya has the problem of being too rigid in its advertising approach. Users will find a large number of pop-up and patch ads in the application interface. These ads are placed in such a way as to discourage users from clicking through the interface to find their favorite audio content. A large number of users who uninstalled Ximalaya complained that the ads were 'everywhere'. Inappropriate ad placement has a negative impact on users' willingness to pay and advertisers' willingness to invest.

6. Conclusion

This study finds that in the context of the AI-enabled era, Chinese online audio platform represented by Ximalaya has a relatively well-equipped profitability strategy and industrial chain. At the same time, Ximalaya has actively introduced AI and other cutting-edge technologies to optimize all aspects of platform operation. However, the current Profitability Strategy of Ximalaya is still flawed. In the future it needs to optimize the segmentation of tracks and advertising methods.

To sum up, online audio platforms should take an all-round view when formulating a profitability strategy. The platforms should expand consumption scenes, connect online and offline, and build a complete audio ecosystem. They should also introduce advanced technology to optimize each link from upstream to downstream. Through these strategies, they may eventually realize cost reduction and profitability.

However, the current application of AI technology in the online audio industry is still in its infancy. Therefore, there are still many possible ways about how AI enable audio platforms. Future research could examine this issue in depth with the latest industry data.

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