

The Application of AI Technology in China's Douyin Live Commerce and Its E-commerce Strategy in a Cross-cultural Context - An Australian Example

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Abstract. This paper explores the future business strategies of cross-border e-commerce companies from China using AI technology to apply the live commerce practice based on the TikTok platform in the Australian market. Throughout the literature review, this paper lists the existing studies about the factors influencing consumers' preference for live commerce and the application of AI technology. Based on the Chinese market, these studies' results provide a transferable experience for the Australian market. On top of that, the use of AI technology allows for 24/7 live streaming of products, reducing labour costs and broadening the reach of live streaming. It also allows virtual streamers to perform better than real people in terms of consistency and accuracy of the information they present. However, Australian consumers have low trust in AI because they are highly concerned about data privacy. Based on the above research, this paper proposes business strategies for cross-border e-commerce companies from China using AI technology to enter the Australian market using the SWOT model. Also, there are recommendations to help these companies succeed in the Australian market in live commerce.

Keywords: AI virtual streamers; Live commerce; Cross-cultural marketing; TikTok; Cross-border commerce.

1. Introduction

Live commerce has experienced great success on social media, and data from the Chinese TikTok (also known as Douyin) market provides the basis for this. According to the 2024 China Retail Development Report published by Nielsen, between January and February 2024, sales of Douyin e-commerce in China's fast-moving consumer goods market increased by more than 70%, far outpacing the 4.4% increase in integrated e-commerce and the -6.4% increase in the offline market. Meanwhile, according to Statista, 81% of online consumers in China used live commerce to make purchases in the previous year, 2023, the highest percentage in the world. On top of that, the Asia-Pacific region is the most interested in live shopping worldwide. In particular, according to the same report, 31% of Australian online consumers say they purchase via live streaming at least once a month. While the report says Facebook is the trading platform nearly half of Australian online consumers use, TikTok is attracting more Gen Z consumers. Therefore, these figures from China show a bright future for businesses in the Australian market, which is also in the Asia-Pacific region, for live commerce. TikTok has even more potential for younger generations.

With the above background, this study aims to sort out the existing research, that is, on live commerce and the empowerment of AI in live marketing. Taking TikTok as an example, it explores how AI technology can help Chinese cross-border e-commerce players who wish to leverage live commerce to succeed in the Australian market in a cross-cultural context. Therefore, this study will complement the academic understanding of integrating AI technology with Chinese cross-border e-commerce companies regarding overseas live commerce strategies and provide a theoretical basis for companies to adopt more effective market expansion strategies in different cultural markets.

This paper first sorts out the existing factors affecting consumer preferences in live commerce in the literature review and the application and help of AI technology in e-commerce platforms.

Subsequently, this paper will explore the use of AI in Douyin's live commerce in China. Next, it analyzes the acceptance analysis of AI in live streaming commerce in a cross-cultural context. Then, it uses the SWOT tool to plan the business strategy of the live streaming commerce model based on AI technology support in Australia. Finally, there are conclusions, recommendations, and a summary at the end.

2. Organization of the Text

This paper, based on the ScienceDirect database, screens the global literature with the keywords "AI in live streaming commerce," "TikTok live streaming commerce," "Douyin live streaming commerce," and "Cross-border live streaming commerce." "Douyin live streaming commerce" and "Cross-border live streaming commerce." were published between 2022 and 2024. Specifically, there are 81 related studies. Among them, 3 from 2021, 10 from 2022, 34 from 2023, and 34 articles from 2024 are the most relevant years.

Existing research mainly focuses on business economics while involving social behaviour, psychology, computer science, and other subject areas. The analysis of cross-border e-commerce companies using AI technology for live commerce in a cross-cultural context on TikTok has yet to receive sufficient attention. Therefore, the authors summarize and sort out the existing viewpoints through the following themes to serve as the theoretical support for this research.

2.1. Live Streaming and E-Commerce

Live commerce first occurred in China, a new term for combining streaming video and e-commerce [1, 2]. Usually, the content creators introduce the product for marketing through the live stream, and consumers can buy the goods directly from the live window; this marketing method is called live commerce. As of June 2023, the number of livestream shopping users in China reached 526 million, comprising 48.8% of the total Internet users in the country.[3].

Live streaming's rapid growth is due to its innovative ability to help streamers communicate with viewers and showcase products vividly [4]. Furthermore, companies can operate live commerce with a different focus on interaction to attract consumers, not only by showing the product actively. In a study conducted by Zhang, Sethi, & Zhang in 2022, they found that the high entertainment quality and low price of live streaming are critical factors in attracting consumers, suggesting that companies can operate their live commerce [5].

Currently, live streaming commerce on TikTok is mainly through the creators on the platform who open live broadcasts to show their products. In contrast, Douyin's live-streaming marketing model in China is more mature, with Chinese retailers hiring specially trained streamers to promote their products at fixed times of the day. A window for the product pops up at the bottom of the livestream, and viewers click on it to make a purchase. This feature is still underdeveloped on TikTok and is in the stage of being introduced to the public by the official platform (Figure 1).

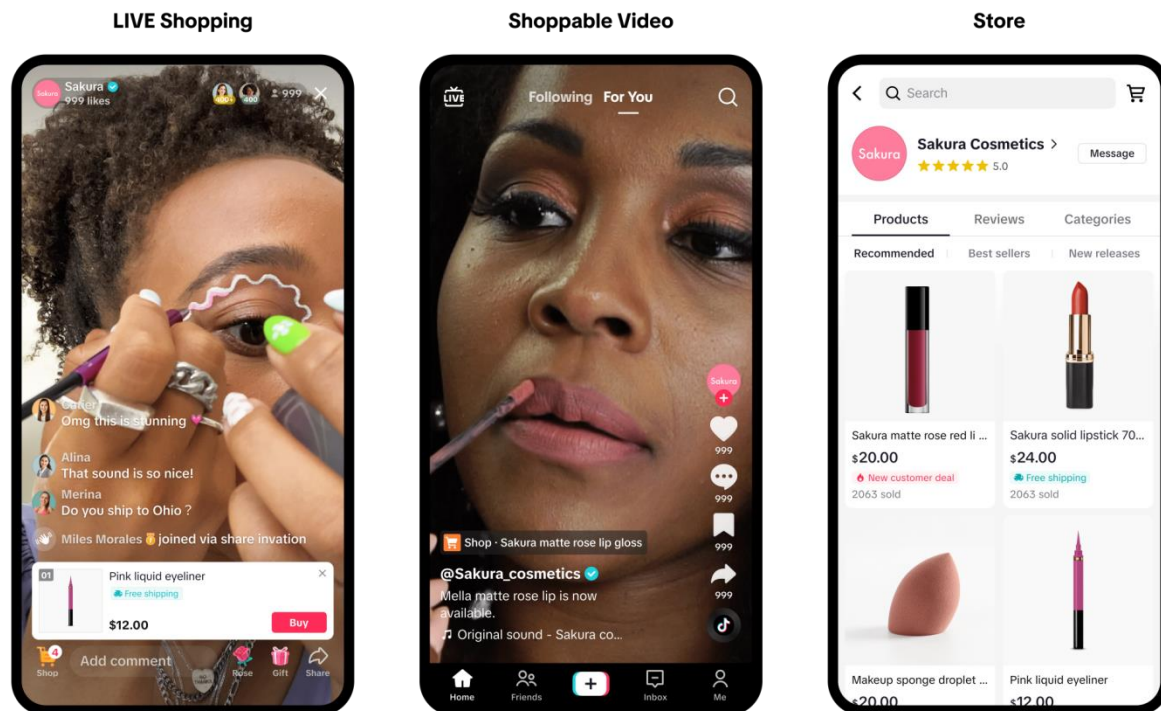


Figure 1. TikTok, Introducing TikTok Shop by TikTok Official Portal, Dec. 2023. Source: <https://business.tiktokshop.com/uk/seller>

2.2. The Impact of AI on Live Commerce

As mentioned above, the success of live commerce comes from its ability to interact with consumers in real-time. Therefore, streamers are essential to live commerce and greatly influence sales results. Regarding existing research findings, Xu & Ruan 2023 studied that trust is crucial in influencing consumers' purchase intention [6]. Lin et al. 2023 studied the personality traits of streamers, such as gender, age, beauty, and frequency of interaction, which significantly influenced viewers' purchase decisions regarding viewing time [7]. Zhou & Tian, in 2022, also found that interactive streamers had a significant positive impact on sales through survey analysis [8].

Due to technological developments, e-retailers in China are considering adopting AI digitizers to replace live streamers in their live marketing campaigns. The reasons for this are: firstly, AI virtual streamers can broadcast live 24/7, extending the broadcast length to reach more viewers. Secondly, social platform influencers' personal branding and interaction style, known as KOLs (also known as, Key Opinion Leaders), significantly impact viewers' purchasing decisions [9]. Scandals or inappropriate comments made on air by live broadcasters can negatively impact consumer purchasing decisions [10].

The emergence of virtual digital human streamers based on AI technology has further impacted live commerce. According to a study by Xu & Ruan in 2023, while AI streamers fall short in establishing an emotional connection, they perform better in consistency and accuracy of the information they provide [11]. However, the anthropomorphic characteristics of virtual streamers improve consumer engagement, purchase intent, trust, and closeness with consumers [12]. Increasing virtual streamers' likability, vigour, and responsiveness enhances social and remote proximity, promoting purchase intent [13].

3. AI and Live Commerce

After understanding the background of live e-commerce, the next part of this paper will explore in detail the application of AI technology in China's Douyin live e-commerce.

3.1. Direction of application

There are several directions in which AI can be used in live commerce, as shown in the table 1 below.

Table 1. Directions For AI In Live Commerce

Function	Description	Feature
AI Virtual Streamer	Product promotion and user communication	It can be online 24/7, reducing real-life labour costs.
Customer Service Representative	Natural language processing technology answers user questions and automatically processes orders and after-sales service.	Improve response time and reduce the burden and cost of manual customer service.
Customer Behaviour Analysis	Data mining and machine learning techniques analyze user behaviour patterns on the platform to gain insight into user needs and preferences.	Help brands better understand their target customer base, optimize their marketing strategies, and increase conversion rates.
Real-time Personalized Recommendations	Recommend products in real-time based on user's browsing history, buying behaviour and preferences.	Precise push to target customers to boost sales.
Image Recognition	Use image recognition technology to identify products on display during a live broadcast.	Push to target customers to boost sales precisely.

3.2. Practical Examples of Applications in AI Live Commerce

In China, companies developing AI live streaming technology provide more than just one of the services in the above application directions; they build the entire live broadcast framework, from virtual streamers to data analysis. An example is Huiboxing. Baidu owns the platform and focuses on AI virtual live room building. Like other platforms, the platform uses AI technology to provide functions such as live streaming management, virtual image, intelligent recommendation, data analysis, etc., which helps streamers and businesses better understand audience behaviour and develop effective marketing strategies. Businesses choose the streamer's image, live room decoration, the tone of the speaking, and the introduction style. The virtual streamer's appearance, tone, and style do not differ from that of a natural person, eliminating the distance between the virtual streamers and the consumer, helping consumers build trust and thus influencing consumption decisions. Specifically, this technology has helped, for example, the Guanxin Experimental Lab achieve a 200% incremental increase in total transaction volume and a five-fold increase in the length of live streaming time compared to human live streamers [14].

In addition to retailers, MCNs (also known as multi-channel networks) are also using AI virtual streamers technology to conduct live commerce in place of influential individual creators in their companies. For example, Remote Technology, an MCN organization, created a virtual image in the image of one of its singers from Taiwan, China, Yiru Chen, enabling him to use a digital clone of his image to promote a specific food product in his live streaming for 15 hours long [15].

4. Analysis of the Application of AI in Live Business in a Cross-Cultural Environment

4.1. Analysis of Cultural Differences in Technology Acceptance

In a cross-cultural environment, if cross-border e-commerce companies want to replicate the success of China's virtual streamers live-streaming goods in overseas markets, they must consider the communication differences between high-context and low-context cultures. High-context cultures more commonly influence Asians and pay more attention to interpersonal relationships. Therefore, in live commerce, Chinese consumers may prefer interaction in live streaming and the communication

experience. In other words, if the AI streamer needs more intelligence, it can only reiterate the product description without giving clients the information they want. Customers will become less trusting of these virtual streamers, and they will be less inclined to buy. [16]. However, consumers influenced by low-context culture are more concerned with direct and clear communication and may be more receptive to AI's clear expression and organization.

4.2. Applicability of the Technology Acceptance Model (TAM) in Different Cultures

According to the TAM model, consumers in different cultures may have different Perceived Usefulness (PU) and Perceived Ease of Use (PEOU).

From a perceived usefulness perspective, Statista's data report shows that 80% of Australian e-commerce organizations already use AI. 60% of Australians are confident and hopeful that AI can enrich the online shopping experience and improve product quality. Thus, from a perceived usefulness perspective, Australians generally accept that AI in e-commerce is valuable. However, while most Australians believe that AI technologies can bring benefits in terms of efficiency gains, innovation, and resource utilization, only half think that these benefits outweigh the risks [17].

Furthermore, from a perceived ease of use perspective, Australians are less familiar with AI than in China and, therefore, have a low perceived ease of use of AI. Also, according to Statista, in 2022, only 24% of Australian organizations will be deploying AI, with most of the rest still exploring AI, compared to 58% of organizations in China. In addition, in 2023, 47% of Australian e-commerce organizations are in the Artificial Intelligence (AI) integration stage, compared to only 33% of organizations in the implementation stage.

4.3. Trust

Privacy and data security are essential considerations in the Australian market environment. In Australia, most people are wary of AI systems. Only 34% said they are willing to trust AI systems, a relatively low trust among Western countries. In addition, 71% of Australians surveyed believe that AI needs to be regulated and that current legal and regulatory measures are insufficient to safeguard the safe use of AI. Yet, they think there needs to be more trust in governmental and business organizations to generate, apply, and regulate artificial intelligence. [16].

As a result, Australians have complex and ambivalent attitudes towards AI technologies. On the one hand, they see the potential for AI to increase efficiency and innovation; on the other hand, they are concerned about privacy issues when applying AI to life.

5. Exploring the development of the TikTok live streaming business model in Australia

For Chinese cross-border e-commerce companies that see the potential of the AI live commerce market in the Australian market, they should consider the cross-cultural differences mentioned above and use SWOT tools to plan their business strategies for this market.

5.1. Strengths

Compared with traditional e-commerce platforms, live streaming engages users in a highly interactive format, and interaction increases consumer purchasing behaviour. Therefore, TikTok, as the most popular social media platform in Australia, live commerce provides e-commerce with both massive user traffic and real-time interactivity.

In addition, China's AI virtual live streaming rooms use AI images that are indistinguishable from real people and different types of language styles; this not only allows the AI to retain the advantages of accuracy and logic in its expressions but also simultaneously equips the virtual streamers with the ability to express more anthropomorphic care for consumers in language.

Secondly, the empowerment of AI allows companies to gain lower costs and higher efficiency.

5.2. Disadvantages

Australians are more likely to expect the government to introduce strict data privacy rules, which may impose restrictions on the collection and use of TikTok data, thus affecting the effectiveness of personalized recommendations and advertising. In addition, trust is an essential factor influencing consumer decision-making. Australians' distrust of AI increases the complexity of using AI to operate live commerce for cross-border e-commerce companies.

5.3. Opportunities

Despite the challenges, the popularity of online shopping and active consumer interest in live commerce in Australia presents a significant market opportunity for TikTok Live Commerce. As more consumers turn to online shopping, TikTok is continuing to educate the market on the features and benefits of TikTok Shop. As the market is in its developmental stage, cross-border e-commerce companies can capitalize on this opportunity to get ahead of their competitors and increase brand awareness in this emerging market through live commerce.

Secondly, the development of AI technology has given companies the opportunity. A few years ago, virtual streamers must constantly be close to anthropomorphism to influence consumer decision-making. Today's enterprises can positively realize the creation of a virtual streamer's image that is no different from a real person to live broadcast, which indicates the development and progress of technology and the unlimited potential of AI technology.

5.4. Threats

Meanwhile, TikTok's live commerce is also facing competitive pressure from its main competitor, Facebook. These platforms already have a large consumer base and could significantly threaten the emerging TikTok live commerce business. In addition, if consumers become more privacy-conscious, they may choose platforms that better protect privacy, such as Facebook Marketplace, which allows for one-on-one transactions; this could affect user growth and engagement in TikTok's live commerce.

6. Conclusion

The above analysis shows that the Australian market is open to live-streaming e-commerce, especially for the younger generation. As more consumers turn to online shopping, TikTok's live streaming commerce model has great potential for growth in Australia. In addition, applying AI technology reduces labour costs for live e-commerce. Its technological development allows virtual streamers to be indistinguishable from real people in terms of appearance and debugging in terms of linguistic styles, which will increase interactivity and positively influence consumer decisions. However, trust plays a crucial role in influencing consumer purchase intent. Australian consumers need higher confidence in AI. To help establish trust with consumers, businesses should offer educational materials such as training sessions, videos, or posters to enhance their understanding of AI technology. Moreover, their high privacy concerns may affect the effectiveness of personalized recommendations, which poses a challenge for cross-border e-commerce. Finally, the TikTok live commerce model faces competitive pressure from Facebook in Australia, which may pose an obstacle to the market penetration of TikTok live commerce.

This paper provides the following recommendations for cross-border e-commerce companies based on the findings. First, to better use virtual streamers to improve efficiency and reduce costs, Australian consumers' trust in AI virtual streamers should be increased. Cross-border e-commerce companies can build an emotional connection with consumers by tuning the language of virtual streamers to make them more dynamic and responsive. Second, cross-border e-commerce companies should actively label the use of AI technology in live broadcasts and be transparent about data use to increase consumer trust. At the same time, companies should develop above-standard data collection and use strategies by local laws to ensure the legitimacy of personalized recommendations. Third, companies should seize the opportunity of market education and development to enter the live commerce space.

ahead of competitors and enhance brand awareness and market influence to capture the market. Finally, they should pay attention to the technology application trends of other online commerce platforms and consider their transaction and user volume trends to adjust their technology solutions and business strategies flexibly.

This study can draw the following conclusions: the Australian market is open to live streaming e-commerce, especially the younger generation. With more consumers turning to online shopping, TikTok's live streaming commerce model has great potential for growth in Australia. The application of AI technology reduces labour costs for live-streaming e-commerce. It significantly improves the interactivity of virtual streamers, making them close to real people in appearance and language style, which in turn influences consumer decisions. Trust plays a crucial role in influencing consumer purchase intent. Australian consumers have low confidence in AI and are highly concerned about data privacy, which requires cross-border e-commerce companies to focus on their business strategies. The TikTok live commerce model faces competitive pressure from platforms such as Facebook in Australia, which may pose an obstacle to the market penetration of TikTok live commerce. Based on these findings, this paper offers recommendations, including increasing consumer trust in AI virtual hosts, being transparent about data usage, seizing opportunities for market education and development, and following trends in technology adoption on other platforms. Through these strategies, cross-border e-commerce companies can better apply and promote the live commerce model in the Australian market.

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