

Research on the Influence Mechanism of AI Platform Technology Innovation on Marketing Conversion Rate of Partners—Take Hualin International AI Technology Innovation and Application as an Example

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Keywords: Technological innovation; Platform economy; Marketing conversion rate; AI

Abstract: This paper focuses on the research on the influence mechanism of AI high-tech innovation in digital platform economy on the marketing conversion rate of platform partners. Through the research on the influence of AI innovation application in Hualin International Education Platform on digital marketing and commercial conversion rate, the influencing factors and mechanisms are verified after the analysis of specific actual combat data, and suggestions on the promotion of marketing conversion rate by AI technology innovation in digital intelligence platform are put forward.

1. Introduction

With the continuous breakthrough of digital economy and digital technology, China put forward an important concept-new quality productivity in 2024. The AI strong development of platform economy in digital economy innovation has aroused widespread concern in academic circles. In this paper, Hualin International is a commercial and public-welfare education platform for the integration of industry and education under the background of many schools, colleges and universities.

2. Important Concepts

2.1 Platform Economy

The platform is a large-scale new quality economic system based on digital technology, data-driven and platform resources. The platform is a real and virtual trading platform. The platform does not produce products, but it can promote the demand docking between the partners and customers of the platform, and collect service fees from it to obtain economic and social benefits. The platform naturally generates big data of production factors of high-tech AI artificial intelligence innovation, and increases service communication and management efficiency, which is the best application scenario for promoting AI big model and AI intelligent innovation and big data.

2.2 High-tech Innovation

In the era of digital economy, high-tech innovations are mainly artificial intelligence, big data technology, digital transformation, metauniverse, blockchain, cloud computing and other intelligent innovation technologies (Chatgpt, Sora, etc.). This paper focuses on AI.

2.2.1 Artificial Intelligence

In 1956, McCarthy, Minsky and other far-sighted American scientists discussed the problem of machine simulation intelligence, and put forward Artificial Intelligence for the first time. After more than 50 years of rapid development, it became a frontier interdisciplinary subject, and IBM's Deep Blue Computer defeated the human world chess champion. In April, 2023, the American Science Times introduced wearable AR, MR, VR meta-cosmic devices and applications, artificial intelligence, machine learning and so on. In March, 2024, the audio-visual model SORA was launched, which attracted worldwide attention. The current application of artificial intelligence mainly involves AI chips and software; Natural language processing, speech image recognition and computer vision.

2.2.2 Important Application of AI Innovation

1) E-commerce companies analyze users' purchase, consumer psychology, and users' evaluation of goods by big data, guide customer interaction scenarios through accurate analysis of perception, and use AI technology to analyze data into product recommendation, visual design, marketing strategy and marketing plan, and analyze sales status.

2) Google ALPHAGO defeated the world champion in the Go game through intensive learning and deep neural network technical training.

3) Application of deep learning in image recognition: FACEBOOK uses deep learning algorithm for face recognition, and GOOGLE PHOTOS automatically classifies and marks photos.

4) Natural language processing and machine translation recognize and understand human language through intelligent algorithms.

5) Recruitment and Appointment: Amazon uses AI to delete resumes, and the AI initial test will evaluate the candidates and pass the data to the enterprise HR. Unilever processes 1.8 million job resumes every year. Video software is used to select candidates and ask questions for 30 minutes. The software uses natural language processing and body language analysis technology to analyze the body language, facial expressions and words of candidates.

6) Language assistant, chat robot, conversational AI: Estee Lauder uses a voice makeup assistant to help customers understand high-quality and intelligent makeup. The Pentagon and others use chat bots and dialogue AI to help customers and users get answers to questions faster and improve customer service efficiency.

7) AI writing: For example, Dahua Promopt is a fully intelligent independent AI model writing platform, which can handle news report generation, intelligent customer service question and answer system, e-commerce product description, article creation, social media content, advertising marketing page content, voice assistant dialogue, employee training material generation, educational content generation, translation and technical document generation [1-2].

2.2.3 Digital Transformation

The digital transformation of enterprises and organizations systematically adjusts the business model, helps enterprises build management, obtains innovative technologies such as enterprise core value data, artificial intelligence and blockchain, helps enterprises build management to obtain enterprise core value data and dynamic data models, reduces enterprise development risks, improves

quality enhancement effects and establishes core competitiveness.

2.2.3.1 Literature Review of Digital Transformation of Enterprises

The research on digital transformation abroad started earlier, and the first concepts of digital transformation were McCarthy and Patel K (Patel and McCarthy, 2000). The accepted definition of digital transformation in academic circles refers to the digitalization of entrepreneurial thinking, business model, innovation mechanism and management model (Bresciani S, Ferraris A, Delgiudice M, 2018). Sanchis R and others think that if enterprises want to be able to meet the changing needs of customers in the fierce market competition, they should promote the digital transformation of enterprises with the help of digital technology, so as to maintain the vitality and agility of enterprises (Sanchis R, 2020). Marc K. Peter and others mentioned that the rapid development and application of digital technologies such as big data, cloud computing, blockchain and artificial intelligence provide technical support for the digital transformation of enterprises. The research angle of digital transformation in China is generally similar to that of foreign research, which has a complementary relationship.

2.2.3.2 Digital Transformation of Educational Enterprises

The digital transformation of education industry can be seen in online education, mobile education, distance education, digitalization of educational resources and so on. In view of the digital content of educational resources, it needs digital asset copyright, asset transaction, digital policy and so on. Digital education began in 1995 and originated in the United States, marked by the establishment of online video website Lynda (Ma Xiaohan, 2014). After more than 20 years of development, the form and influence of digital education have changed greatly. Digital education makes the learning process get rid of the constraints of time and place, with rich teaching resources, low tuition fees and low learning threshold, and adapts to the new educational requirements of autonomous learning and lifelong learning in the information age. Its development has a profound impact on learning methods, teaching methods and systems (Zhang Chengqi, 2018). Wang Chen and Liu Nan (2015) proposed that in the future, all education will become digital education.

2.3 Digital Marketing

Digital marketing is a marketing method that uses digital communication channels to communicate with consumers in a timely, customized and cost-saving way, and realizes marketing goals with the help of the Internet, computer communication technology and digital interactive media. Digital marketing mainly uses search engine optimization, search engine marketing, social media marketing, e-mail marketing and content marketing to create a good interactive experience for users and increase the scale of charging customers.

2.4 Marketing Conversion Rate

Marketing conversion rate refers to the rate that potential customers are successfully converted into practical customers within a certain period of time. It can be calculated by dividing the number of successful transactions by the number of potential opportunities, and the percentage obtained is marketing conversion rate. The transformation focuses on improving product quality and service level, optimizing pricing strategy, improving the ability of sales team, using data analysis tools and optimizing user experience. High-tech innovation factors that affect the conversion rate of digital platform partners, first of all, the platform builds a large model of precision marketing through data computing algorithm, and collects important information for customer portraits, such as customer

demographic attributes, hobbies, social attributes, brand hobbies, shopping tendencies, consumption habits and consumption data; Secondly, intelligent AI innovative technologies, such as human-computer interaction AI chat robots, and intelligent dialogue systems facilitate transactions; Third, generative AI applications, efficient generation of content, sound and video will improve the conversion rate of partners. In the future, 40-70% of platform information will be automatically and intelligently generated by generative AI or AI big models, and the lifestyle will be changed.

3. Digital Innovation Theory and Literature Review

3.1 Digital Innovation Management

The impact of digital technology and the rise of digital technology represented by ABCD new innovative technology have spawned a large number of digital innovations. Digital technology innovation (Hoerlsberger,2019) includes the process of digital innovation, which uses digital technology to promote the iterative innovation of new product generation and update. Digital product innovation profoundly changes the original product form, and new product production makes the product show a new special diagnosis that the function cannot be defined in advance, the boundary flows, and the output and process are inseparable. (Blichfeldt and Faullant, 2021) Digital process innovation refers to the application of digital technology to improve and reconstruct the original innovation process, and creativity generation refers to the subversion of the traditional linear development process of R&D, manufacturing and sales logistics (Nambaisan et al., 2017). Digital organizational innovation refers to the use of digital technology to reconstruct organizational model, governance structure and operation model (Monteiro,2018), which is manifested in organizational structure, culture, leadership, employee roles and skills and other aspects of innovation. For example, based on the digital thinking mode, cross-functional collaboration and empowerment are carried out, employees are encouraged to strengthen independently, and a more decentralized decision-making process is adopted, thus improving the efficiency and ability of resource utilization (Nambisan,2018). Digital business model innovation means that digital technology creates a decision-making process of change and builds a new business framework and profit model (Brresciani et al., 2021). Garzella et al. (2021) put forward three paths of digital technology innovation model: digital enhancement, digital expansion and digital transformation[3-4].

4. Hualin International (Digital Hualin) and Brief Introduction of Sample Experiment Enterprise

4.1 Introduction to Hualin International

Hualin International's parent company, Zhejiang Boguan Hualin Cultural and Creative Co., Ltd., was established in December 2008. Its founder further her graduation and DBA education in U.S. and France, returned to China and was supported by the Yangtze River Delta Research Institute in Tsinghua and Zhejiang Province, Zhejiang Province. It is dedicated to cultivating outstanding entrepreneurs, focusing on language education, study abroad training, language translation services, publishing, international conferences and exhibitions, and foreign affairs reception. The company is good at enterprise services, especially good at enterprise innovations, it is also an entrepreneurial education technology platform integrating digital economy, meta-universe, artificial intelligence and blockchain education, and its business radiates across the country. At present, Hualin International has subsidiaries such as Kexu Boyuan, Zheli Education, Mobai Technology, Youbi Interactive and Tanhai Education. Hualin International has gradually become an AI intelligent digital system for global online transactions-Digital Hualin Platform.

4.2 Hualin International Digital Transformation and Innovation

The digital transformation of Hualin International mainly lies in the establishment of an online and offline ecosystem, including major partners in 20 countries all over the world, and the formation of an educational ecosystem. The content of Hua Lin International Digital Transformation can be seen in Table 1.

Table 1: Features, Functions and Organizational Innovation of Hualin International Digital Platform

Function	Trail
Column Design	All organizations of the company have online operation module, customer and consultation interactive module, English teaching interactive area, study abroad intermediary area and overseas talent headhunting area. The interface is simple and easy to use, and there is also a psychological consultation window and a free discussion question and answer area. Participate in the Chinese training digital platform and provide Chinese language services and training to foreigners.
Website Management	The creator manages the site, compiles the platform code language, defines the main body of the page, and sets basic variables such as user rights, email, interaction, security, etc.
User Management	Students establish their own accounts and pass Email authentication. Administrators control the platform, choose courses, assign different roles, control courses, and modify personal data and courses.
Curriculum Management	According to setting course access rights, controlling settings, display formats and adding or deleting functional modules, the teacher administrator can control online management of backup courses.
Job Module	Provide a variety of upload homework functions, online text, files, homework submission methods, teachers set time DDL, and give accurate and timely evaluation feedback according to standards.
Discussion area	Support a variety of discussions, answer questions, adjust the discussion area and dialogue on a single topic, upload learning materials, exchange and share, and cooperate with teachers and students.
Chat Room	Users and platforms, customers and organizations, teachers and students, students communicate in real time, and support various functions such as file transfer and chat record setting and saving.
Wiki	Providing search function similar to Wiki encyclopedia can improve students' autonomous learning ability, give full play to the advantages of professional search and solve problems collaboratively.
Interactive Evaluation	A complete evaluation system, changing the traditional evaluation, realizing the diversification of evaluation subjects, teacher, self, peer evaluation, re-evaluation and sample evaluation, is a characteristic function, guiding and reminding.
Test	A variety of tests, such as multiple-choice questions, fill-in-the-blank questions, true-false questions, calculation questions, objective automatic grading, question bank, the number of answers to different tests, and opening hours. Evaluation feedback
Report Forms	Track and record all kinds of online activities of students, study visit time, visit method, homework quality and study videos, etc. to analyze their wisdom and learning situation.

Source: compiled by the author

Digital process innovation

First of all, Hualin launched its own unique and high-quality micro-video resource library to provide teachers and students with a complete interactive autonomous learning experience and personalized learning of every knowledge point, skill and difficulty. Secondly, students' autonomous learning ability is improved through the digital platform, and teachers play the roles of guidance, supervision and assistance in its teaching management. Finally, the digital teaching practice can efficiently analyze and collect data, so as to teach students in accordance with their aptitude, and professional teachers can make efficient use of time and space differences, carefully correct and review students' homework and tests, and make objective and fair teaching evaluation[5].

Digital Product Innovation

For educational enterprises, digital products are mainly quality courses, cloud courses, MOOCS, short videos, drainage videos, video advertisements, live events and so on. Hualin International, which has its own digital platform, has produced and launched some digital video courses (free and paid) to play on the digital platform, set up a learning community, conduct customer service interaction and teacher-student interaction on the online platform, and all kinds of data generated from it, including the visits and clicks of various materials of online courses, can be used as data analysis indicators. Such as Negotiation in Life in Netease Cloud class, excellent postgraduate courses from confrontation to win-win, IELTS TOEFL writing, analysis of long and difficult sentences, rapid improvement of English writing, international trade practice, international negotiation practice, business English reading, business English writing, English analysis of Chinese and foreign historical innovative figures and other mixed courses are all in the era of online education.

Hualin International and Digital Technology

The author has paid long-term attention to and published research results of artificial intelligence combined with language education and machine translation and published many research in periodicals for many years. Hua Lin international digital platform AI generates content quickly, automatically corrects homework, scores and judges oral tests, and the workload of language teachers is particularly heavy, especially the evaluation of publishing papers and oral English writing consumes a lot of time and energy. Facing a large number of students, such as a mountain of workload, correcting homework, and high-tech AI innovations, such as batch-by-batch, second-change, AI+, VR and other cutting-edge digital education technologies, can help to do a lot of academic situation management and point out the weakest links in learning and practice in time.

4.3 Hualin International Digital Marketing System

4.3.1 Application of High-Tech Innovation on Hualin International Platform

Online Living Room

Communication Space

Meta-cosmic Technology

AI Technology (chatbot +Chatgpt)

Uploading and tutoring system for second batch and second change homework

Robot tutoring-class system

Real-life tutoring system-class system

Example of AI Information System Management Based on Language Training in Hualin

- 1) Communication system visualizes metauniverse and innovates communication environment.
- 2) Curriculum system
- 3) Audition class
- 4) Class system (real traditional class system)

- 5) Online signing system
- 6) Online financial payment system
- 7) Class execution process system
- 8) Customer feedback evaluation system
- 9) Suggestion system
- 10) social community
- 11) Online uploading and correcting system for homework
- 12) AI generates homework, and pictures, texts and short videos are submitted to interactive systems such as shared spaces and communities.
- 13) Robot tutoring system

4.3.2 Hualin International AI Technology Innovation and Digital Marketing System and Process

Live: Live marketing 1 happened during 2024 postgraduate live streaming

8,000 people were pushed the stream online, 20 people were consulted on the day of pushing the stream, and 6 people were consulted on the day of live broadcast). The live broadcast and marketing example 1 can be seen in the picture of post 1, as shown in Figure 1.



Figure 1: 2024 Postgraduate information live broadcasting and online stream 1

2.2024 Live streaming 2 of postgraduate entrance examination

(10,000 people pushed online, 6 people consulted on the day of pushing, and 3 people consulted on the day of live broadcast) Live poster voucher. The following Figure 2 is about the second live streaming 2 of postgraduate entrance examination.

2024 Postgraduate Information accumulation and online streaming 2

Pursuing your postgraduate degree part-time

Live speaker: Shen Lijuan

Faculty of School of International, Hangzhou Normal University
Hua Lin International+ Kexu Boyuan Tech Founder
Master of International Public Policy and Management
Doctorate of Universite Cote d' Azur

19: 00-20:30; March 15th

Online Streaming Content:

1. Information about Postgraduate examination
2. Second round interview
3. Adjustment
4. Other Solutions

Add a teacher

Figure 2: 2024 Postgraduate information live broadcasting and online stream 2

5. Research Hypotheses

H1: Technological innovation has a positive correlation with marketing conversion rate.

As the core field of business, marketing is driven by technology to collect and analyze data. Digital marketing can more accurately understand customers' needs and behaviors and provide customers with personalized products and services.

H2: The quality of data obtained by digital marketing has a positive correlation with the marketing conversion rate.

How to measure the data quality in marketing activities? Efficient marketing needs high-quality push data, not all data are high-quality, and business decisions made by inefficient data may waste marketing budget and damage brand reputation and image. Data quality includes data privacy, accuracy, integrity, granularity, timeliness, continuity and predictive ability, global activation and practicality.

H3: Digital marketing supported by high-tech AI and big data has a positive correlation with marketing conversion rate.

Digital marketing means that enterprises use digital technology and internet technology to realize communication and interaction with customers. Digital marketing chooses appropriate digital marketing search engine optimization and search engine technology to improve the ranking and brand awareness of enterprises in search engines. Social media marketing has the advantages of establishing word-of-mouth and customer maintenance.

6. Research Design

6.1 Sample Selection to Obtain Data Sources

The platform is a cutting-edge high-tech innovation to research and develop AI big model and AI

innovative technology application, which is very difficult. For this reason, a questionnaire on scientific innovation application was conducted, and the data source was Hualin International Platform users (mainly students and parents in the education sector) and partners. It was originally planned to conduct a survey within 10 partners among 30 parents, students and users who took the lead in using the platform for high-tech innovation. Results Rollback: 24 out of 30 households, 24 users (parents and students) and 8 out of 10 partners effectively rolled back, which is the empirical data of this scientific and technological innovation platform.

6.2 Variables

Explained variable: technological innovation (special AI technology)

Explanatory variable: marketing conversion rate (has it improved?)

Moderating Variable: Data Quality of Digital Marketing

6.3 Model design

H1 Technical Innovation

H2: Data Quality of Digital Marketing

H3: Digital Marketing Supported by AI Big Data

D: Marketing Conversion Rate

6.4 Empirical research test data results and data analysis

Participants in the questionnaire: students and charging customers who use Hualin International Digital Platform, parents or students and partners.

Fee-paying customers and students: 30 people were sampled and 24 people were valid)

Parents and customers: 30 samples (24 valid questionnaires)

Partners: Sample 10 partners (8 partners with valid questionnaires).

7. Research Conclusions and Enlightenment

7.1 Research Conclusion

H1: (The data of 18 questions in Questionnaire 1 and 12 questions in Questionnaire 2 show that data are all above 90% which show that it has a positive correlation with marketing conversion rate and positively support the hypothesis.

H2: The data of 9 questions in Questionnaire 1 and 13 questions in Questionnaire 2 are all above 90%, which show that the data quality of digital marketing display has a positive correlation with marketing conversion rate.

H3: Data from 18 questions in questionnaire 1 are all above 90% which show that digital marketing supported by high-tech AI and big data has a positive correlation with marketing conversion rate.

7.2 Research Inspiration

This study shows that in the process of platform economy, AIGC innovation and the explosive development of AI big model, AI technology innovation has a great influence on the conversion rate of digital marketing. Due to the initial data of the platform and the scale of the platform, limited time and energy, limited partners and users who responded to the questionnaire, this paper has to admit limited data are the shortcomings of this study, but all the data positively support all our research hypotheses. In order to obtain high conversion rate in the digital age, we must keep pace with the

times and carry out AI technology innovation on the platform.

References

- [1] Brain White, Stephen Rayner. *Dissertation Skills for Business and Management Students Second Edition*. Tsinghua University Press. 1 edition. 2017.9
- [2] [China] Caohu, Wangsai, Qiaolin. [America] Ella Corfman. *Marketing Strategy in the Digital Era*. [M].Chian Machine Press. 2017.1
- [3] Denis Rothman. *Transformers for Natural Language Processing: Build, Train, and Fine-tune Deep Neural Network Architectures for NLP with Python, Hugging Face, and Open AI's GPT-3, ChatGPT, and GPT-4. Second Edition* [M] Tsinghua University Press. 2024.1
- [4] Li Ruiqin. *Writing and Submitting of English Scientific Research Paper*. [M]. 1st edition. Beijing. Higher Education Press. 2020.6
- [5] Correspondencia D P, Falcao D, Obrien A, et al. *Initial Steps in Writing and Submitting a Research Paper*[J]. 2016.DOI:10.5327/Z52016000100022447-211.