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ИСКУССТВЕННЫЙ ИНТЕЛЛЕКТ И МАРКЕТИНГ: СПЛАВ БУДУЩЕГО И ТРАДИЦИЙ

ПОЯСНИТЕЛЬНАЯ ЗАПИСКА
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ABSTRACT

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Artificial intelligence and marketing---the fusion of future and tradition. Chelyabinsk: SUSU, EU-224, 102 pages, 13 pictures, 7 tables, 45 references.

In recent years, with the continuous reform and innovation of science and technology, artificial intelligence has developed rapidly. Moreover, the application of artificial intelligence technology in many fields has made great progress and development, such as intelligent manufacturing, intelligent transportation, intelligent home, intelligent medical care, intelligent education, intelligent security and so on.

Therefore, in this digital era, artificial intelligence will also become a very popular technological change in the field of management and market science. In the future, artificial intelligence technology will bring great changes to marketing. China's artificial intelligence marketing has achieved good results. A group of traditional marketing-oriented enterprises are in urgent need of artificial intelligent marketing reform.

Based on the above background, this master thesis chooses Chinese market as the research object, Changyu grape wine Company as the case, with Changyu's marketing innovation, and takes the previous academic research as the theoretical basis. The purpose of this paper is to study how to market in the environment of artificial intelligence, and to use artificial intelligence technology for marketing innovation.

CONTENT

INTRODUCTION

With the acceleration and deepening of the application of artificial intelligence technology, the traditional marketing model has been greatly impacted, and the marketing innovation of enterprises focusing on traditional marketing strategies is also facing rare opportunities and severe challenges. Traditional marketing has some problems, such as lagging information collection and feedback, slow decision making, inaccurate information collection and so on. Artificial intelligence technology has the advantages of high efficiency, precision and saving labor cost, so the traditional marketing of enterprises must be reformed by artificial intelligence.

This master's thesis takes the artificial intelligence marketing innovation of Changyu Company as an example, and studies how to carry out the artificial intelligence reform in the traditional marketing enterprises. Firstly, this paper introduces some basic theories of research. This paper mainly introduces that the basic strategy of traditional marketing is based on 4P theory, and also introduces 4P theory in detail. The 7S analysis model and its basic analysis steps are introduced. PEST model analysis is also introduced. Introduced the "Father of Modern Marketing" Professor Don E. Schultz's new marketing theory-"PAR Theory". Artificial intelligence is introduced in detail. This paper discusses what artificial intelligence can help marketing, and also discusses the research of artificial intelligence marketing.

Secondly, the market environment and marketing strategy of the selected enterprise (Changyu) are analyzed in detail. The results show that there are some problems in the marketing strategy of the target enterprise at present: 1). The marketing platform is imperfect. 2). The marketing mode is single and lacks organic combination. 3). Information collection and feedback lag behind, and decision-making is slow. 4). The action lacks data support and the execution process is cumbersome. 5). The correlation between data is weak, and the marketing link is blocked. This paper analyzes the specific situation of artificial intelligence marketing in Chinese enterprises at present. Examples are given to illustrate the successful cases of related topics: Baidu intelligent

marketing platform.

On the basis of detailed analysis, the readers optimized the existing problems of traditional marketing according to PAR theory, and finally put forward some suggestions. At the same time, the reader also provides some suggestions for this kind of enterprises through the results of 7S model analysis. It also predicts the economic benefits of the reform ideas.

At the end of the article, the author also made an overall evaluation of artificial intelligence marketing, and analyzed the limitations of artificial intelligence marketing, such as the impact on the traditional talent system. Readers have studied these problems in depth and put forward solutions.

Finally, the readers put forward the prospect for the future development of artificial intelligence marketing.

Research objectives and tasks:

The main research goal of this master's thesis is to optimize the traditional marketing strategy of enterprises and carry out innovative marketing by using artificial intelligence technology. The author will start with the liquor industry in China market, take the grape wine market as the carrier, and take Changyu Company as a concrete example.

This master's thesis consists of three modules:

1). Theoretical research and evaluation.

2). Comprehensive analysis of target enterprises and artificial intelligence marketing.

3). Display and prospect of research results.

1 THEORETICAL RESEARCH AND EVALUATION

1.1 Research background

Artificial intelligence has lately become a very popular subject in the area of management and marketing sciences, although, quite paradoxically, the works on its development in other fields of science have been proceeding continuously for over half a century. Over the years, artificial intelligence has been appearing in and disappearing from the spotlight depending on the level of its advancement and the increase in its potential applicability. The interest in and the extensive discussion on artificial intelligence are caused by the first wide-scale commercial applications of artificial intelligence, which have shown the potential and the capabilities of this technology also in the area of marketing. The rapid development of artificial intelligence in recent years has been possible thanks to the advancement of the cognitive mechanisms of artificial intelligence and of capabilities of machines to learn based on the obtained data (Lieto, Bhatt, Oltramari, & Vernon, 2017), as well as thanks to the possibility to create previously non-existing information (Grawal, Gans, & Goldfarb, 2017). The power of artificial intelligence also lies in the spectrum of processing of various formats of data - apart from numerical data, artificial intelligence processes texts, images, and sounds, providing them with significance and relevance for further analyses (Dhar, 2016). [1]

At present, the market size of Chinese wine industry is huge. According to the survey report, the production and sales volume of beverage and wine in China will exceed 60 million KL in 2010, and will reach 77.85 million KL by 2015, an increase of 27.83% over 2010 and an average annual increase of 5.57%. Among them, grape wine grows rapidly, with an average annual growth rate of about 20%, and its proportion in

beverage wine gradually increases. [2] In recent years, China's grape wine market has been expanding. With the rising demand of grape wine in China, China has become the fastest growing market of grape wine consumption in the world. In 2017, the sales revenue of China's grape wine industry reached 52.102 billion yuan, and the retail scale of China's grape wine reached 168.2 billion yuan. From 2011 to 2017, the average annual growth rate of sales revenue of grape wine market was 6%. With the increase of business activities, the demand for grape wine has increased rapidly, especially the mid-range and high-grade grape wine. Mid-range and high-end grape wine are becoming more and more popular, and the retail market of grape wine will grow rapidly. It is estimated that by 2022, the retail scale of grape wine in China will reach 262 billion yuan. Therefore, facing such a huge market environment, it is necessary to start with the combination of artificial intelligence technology and marketing, and put forward marketing innovation.

1.2 Theoretical overview

1.2.1 The basic theory of marketing

1). The definition of marketing

Definition of Marketing

Marketing is defined by American Marketing Association (AMA) as "activities, organization sets and the process of creating, communicating, delivering and exchanging products for customers, customers, partners and the whole society". This definition and its definition of "marketing research" are once every three years. [3] The benefit of "the whole society" was added to the definition in 2008. By comparing this definition with AMA's version in 1935, we can see the development of this definition:

"Marketing refers to the performance of business activities that flow goods and services from producers to consumers".

The term developed from its original meaning, literally referring to entering the market together with the goods for sale. From the point of view of sales process engineering, marketing is "a group of interrelated and interdependent processes with other functions of business, aiming at realizing customers' interest and satisfaction.

2). Marketing Mix

McCarthy proposed the idea of "marketing mix" as a conceptual framework translating marketing planning into practice (Bennett, 1997). Though the marketing mix is not a scientific theory, its tools can develop both long-term strategies and short-term tactical marketing programmers (Palmer, 2004). McCarthy refined previous Borden's conception of satisfying the target market. He regrouped Borden's 12 elements (product planning, pricing, branding, channels of distribution, personal selling, advertising, promotions, packaging, display, servicing, physical handling, fact-finding and analysis) into four elements, called 4P: product, price, promotion, and place. [4]

However, as early as when he got his Ph.D., his mentor Richard Clewett had already used the theoretical framework with "Product, Price, Distribution, Promotion" as the core. McCarthy changed "Distribution" into "Place", making this theory a so-called "4P". According to McCarthy's theory, a successful and complete marketing activity means the behavior of putting appropriate products and services into a specific market with appropriate products, appropriate prices, appropriate channels and appropriate means of communication and promotion. 4P principle is to study marketing problems from the perspective of management decision. From the perspective of management decision-making, various factors (variables) that affect the marketing activities of

enterprises can be divided into two categories: first, the uncontrollable factors of enterprises, that is, the uncontrollable markets of marketers themselves; Marketing environment, including micro environment and macro environment; Second, controllable factors, that is, products, trademarks, brands, prices, advertisements, channels, etc. that marketers can control themselves. [5]

Product: From the marketing point of view, products refer to anything that can be provided to the market for people to use and consume and meet people's certain needs, including tangible products, services, personnel, organizations, ideas or their combinations. Pay attention to the function of development, require products to have unique selling points, and put the functional demands of products first.

Price: refers to the price when customers buy products, including discounts and payment terms. Price or price decision is related to the profit, cost compensation, and whether it is beneficial to product sales and promotion. There are three main factors affecting pricing: demand, cost and competition. The highest price depends on the market demand, while the lowest price depends on the cost of the product. Within the range of the highest price and the lowest price, how high an enterprise can set the price of this product depends on the price of the same product of competitors. According to different market positioning, different pricing strategies are formulated. The pricing basis of products is the brand strategy of enterprises, paying attention to the gold content of brands. [6]

Place: refers to the sum of all the links and driving forces experienced in the whole process of commodity transfer from production enterprises to consumers. That is to say, Place mainly refers to the way that enterprises choose distribution channels reasonably and organize the physical circulation of commodities to achieve their marketing

objectives, including the combination and application of controllable factors such as distribution-related channel coverage, commodity circulation links, middlemen, network settings and storage and transportation. Enterprises do not face consumers directly, but pay attention to the cultivation of distributors and the establishment of sales network. The contact between enterprises and consumers is carried out through distributors.

Promotion: Enterprises pay attention to the change of sales behavior to stimulate consumers, and promote the growth of consumption by short-term behaviors (such as making profits, buying one get one free, setting off the atmosphere of marketing scene, etc.), attracting consumers under other brands, or leading to early consumption to promote the growth of sales. Enterprises use various information dissemination means to stimulate consumers' desire to buy and promote product sales to achieve their marketing objectives, including the combination and application of controllable factors such as advertising, personnel promotion, business promotion and public relations related to promotion. Many people understand Promotion as "promotion" in a narrow sense, but it is actually very one-sided. Promotion should be a series of marketing behaviors including brand promotion (advertising), public relations and promotion.

1.2.2 Introduction of analytical methods

1). McKinsey 7s Model

McKinsey 7s model is a tool that analyzes firm's organizational design by looking at 7 key internal elements: strategy, structure, systems, shared values, style, staff and skills, in order to identify if they are effectively aligned and allow organization to achieve its objectives.

The model can be applied to many situations and is a valuable tool when organizational design is at question. The most common uses of the framework are: To facilitate organizational change. To help implement new strategy. To identify how each area may change in a future. To facilitate the merger of organizations. [7]

Strategy is a plan developed by a firm to achieve sustained competitive advantage and successfully compete in the market. What does a well-aligned strategy mean in 7s McKinsey model? In general, a sound strategy is the one that's clearly articulated, is long-term, helps to achieve competitive advantage and is reinforced by strong vision, mission and values. But it's hard to tell if such strategy is well-aligned with other elements when analyzed alone. So the key in 7s model is not to look at your company to find the great strategy, structure, systems and etc. but to look if its aligned with other elements. For example, short-term strategy is usually a poor choice for a company but if its aligned with other 6 elements, then it may provide strong results.

Structure represents the way business divisions and units are organized and includes the information of who is accountable to whom. In other words, structure is the organizational chart of the firm. It is also one of the most visible and easy to change elements of the framework.

Systems are the processes and procedures of the company, which reveal business' daily activities and how decisions are made. Systems are the area of the firm that determines how business is done and it should be the main focus for managers during organizational change.

Skills are the abilities that firm's employees perform very well. They also include capabilities and competences. During organizational change, the question often arises of what skills the company will really need to reinforce its new strategy or new structure.

Staff element is concerned with what type and how many employees an organization will need and how they will be recruited, trained, motivated and rewarded.

Style represents the way the company is managed by top-level managers, how they interact, what actions do they take and their symbolic value. In other words, it is the management style of company's leaders.

Shared Values are at the core of McKinsey 7s model. They are the norms and standards that guide employee behavior and company actions and thus, are the foundation of every organization. [8]
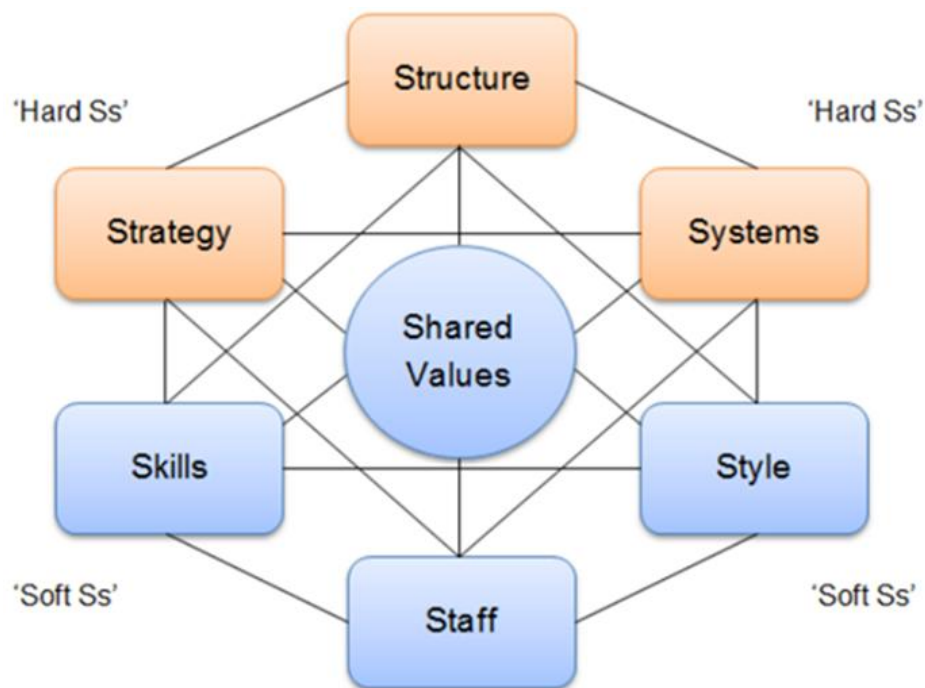
Picture 1.1 – Schematic diagram of 7s model

Applicability analysis: because the main purpose of this paper is to optimize the traditional marketing strategy of enterprises and carry out innovative marketing by using artificial intelligence technology. This is to change the strategic plan of the enterprise. Furthermore, the McKinsey 7s Model can be applied to many situations, and

it is a valuable tool when there are problems in organizational design. The most common uses of this framework are: to facilitate organizational change. to help implement new strategy. to identify how each area may change in a future. to facilitate the merger of organizations. therefore, this analysis model is very helpful to the analysis process of the enterprises selected in this paper.

2). PEST analysis method

PEST analysis is a method used by strategic consultants to help companies review their external macro environment. Refers to the analysis of the macro environment, which is also known as the general environment, and refers to the various macro forces that affect all industries and enterprises. To analyze the macro-environmental factors, different industries and enterprises will have different specific contents according to their own characteristics and business needs. Common analysis elements include: Political Factors. Economic Factors. Sociocultural Factors. Technological Factors. [9]

Political Factors: The political environment includes a country's social system, the nature of the ruling party, the government's principles, policies, decrees, etc. Different countries have different social natures, and different social systems have different restrictions and requirements on organizational activities. The government's policies have a wide influence on the business behavior of enterprises. Even in countries with more developed market economy, the government's intervention in the market and enterprises seems to be increasing, such as antitrust, minimum wage restriction, labor protection, social welfare and so on. Of course, many government interventions are often indirect, often using tax rate, interest rate and exchange rate, bank deposit reserve as leverage, using fiscal policy and monetary policy to achieve macroeconomic regulation and control, and intervening in foreign exchange rate to ensure international

financial and trade order. Therefore, when formulating enterprise strategy, it is very important to judge and predict the long-term and short-term government policies, and enterprise strategy should make necessary preparations for the government to play a long-term role; For short-term policies, different responses can be made depending on their effective time or period.

Market operation needs a set of game rules and reward and punishment system that can guarantee the market order, which forms the legal system of the market. As the compulsory expression of the will of the state, laws and regulations have a direct normative role in regulating the market and enterprise behavior. The role of legislation in economy is mainly reflected in three aspects: safeguarding fair competition, safeguarding consumers' interests and safeguarding the greatest interests of society. Therefore, when formulating strategies, enterprises should fully understand the existing laws and regulations, and pay special attention to those laws that are brewing, which is an important prerequisite for enterprises to survive and participate in competition in the market.

Economic Factors: The economic environment mainly includes macro and micro aspects. Macroeconomic environment mainly refers to a country's population and its growth trend, national income, gross national product and its changes, and the level and speed of national economic development that can be reflected by these indicators. Microeconomic environment mainly refers to the income level, consumption preference, savings situation, employment degree and other factors of consumers in the area where the enterprise is located or serves. These factors directly determine the current and future market size of enterprises.

Important monitored key economic variables: GDP and its growth rate, availability

of loans for China's transition to industrial economy, disposable income level, residents' consumption (savings) tendency, interest rate, inflation rate, economies of scale, government budget deficit, consumption pattern, unemployment trend, labor productivity level, exchange rate, securities market situation, foreign economic situation, import and export factors, income difference between different regions and consumer groups, price fluctuation, currency and finance

Sociocultural Factors: the social and cultural environment includes the educational level and cultural level, religious beliefs, customs, aesthetic views and values of residents in a country or region. The level of education will affect the level of residents' needs; Religious beliefs and customs will prohibit or resist certain activities; Values will affect residents' recognition of organizational goals, organizational activities and organizational existence itself; Aesthetic views will influence people's attitude towards the contents, ways and results of organizational activities.

Key social and cultural factors: women's fertility rate, number of special interest groups, number of marriages, number of divorces, birth mortality rate, population migration rate, social security plan, life expectancy, per capita income, lifestyle, average disposable income, trust in the government, attitude towards the government, attitude towards work, buying habits, concern about morality, saving tendency, gender role investment tendency, racial equality, etc. Average education status, attitude towards retirement, attitude towards quality, attitude towards leisure, attitude towards service, attitude towards foreigners, energy saving by pollution control, social activities, social responsibility, attitude towards occupation, attitude towards authority, population changes in cities, towns and rural areas, and religious belief status.

Technological Factors: the technological environment should not only investigate

the development and changes of technological means directly related to the activities in the field where the enterprise is located, but also know in time: 1) the state's investment and support priorities for scientific and technological development. 2) Technical development trends and total research and development expenses in this field. 3) Speed of technology transfer and commercialization. 4) Patents and their protection.

Applicability analysis: The main function of PEST analysis method is to analyze environmental factors. The third chapter of this paper will consider the feasibility of implementing artificial intelligence marketing in target enterprises, and just use the four basic elements of this method to propose the advantages of target enterprises in marketing innovation.

3). PAR theory

PAR theory is a new theory created in 2017 by Don E. Schultz, "integrating marketing guru", in combination with the marketing reform in the era of artificial intelligence after SIVA theory.

PAR theory subverts the top-down marketing process of enterprises in 4P theory, and constructs a general marketing path under the intelligent background based on consumers' perception of big data. [10]

"p" refers to Pattern and Platform, that is, consumers will become dominant, marketing platform will be consumer-centered, marketing model will pay more attention to consumer data, and future marketing foundation will be based on big data. That is, the consumer-centered platform, which means that marketing should interpret the data in depth from the consumer-centered platform. For example, taking Baidu as an example, you can use the big data resources accumulated by its own platform to make more in-depth portraits and sketches of users. There are six key difficulties in the whole

marketing link, namely, problem diagnosis, user and industry insight, marketing strategy, creative planning, delivery execution and effect evaluation. Among these six key points, the most front-end problem to be solved is the accurate identification of users.

In the Internet environment, consumers receive huge amounts of information, and they often need to spend a lot of time and cost to get the information they really need. Enterprises should ensure that their platform is rich in resources and intelligent in operation, so as to meet their individual needs in the fastest time. In the mode, it is necessary to upgrade intelligently. This means that with the help of data analysis, enterprises will shift the central idea of selling products to providing personalized services.

"A" refers to Agility and Action. Technology makes enterprises flexible, enterprises will perceive consumer demand in real time and respond immediately, and the agility of action will be improved. For example, an important marketing direction in the future is the combination of machine learning and big data foundation. Schultz believes that [11], today's marketing organizations must adapt to rapid changes, to be able to predict the future development direction in real time, instead of storing data first and then analyzing data as before, they will collect and analyze real-time data, giving the analysis results a strong timeliness and generating actions in real time. For example, Baidu has set up an interactive device area with full sense of science and technology. The machine will scan the whole body of the user in it, and project the user's personality analysis on the next screen to realize real-time data collection, real-time feedback and real-time presentation.

Traditional marketing research relies on manpower, does not have the characteristics

of high efficiency and real-time of big data mining and analysis technology, and the decision-making of enterprises is slow. The marketing actions carried out on this basis lack data support, and only rely on experience and intuition. In the marketing under the background of intelligence, data can be easily obtained and scientifically analyzed, and enterprises must speed up decision-making and actions through technology to seize the commanding heights of the market.

"R" refers to Relevance and Response. Technology has changed the difficult situation of consumers' insight in traditional marketing, and connected the multidimensional data of consumers. On this basis, enterprises realized the response to the established or expected consumer demand of each independent individual. This is to propose solutions in time to meet the needs and expectations of consumers. Only this kind of response and response can make marketing more agile. From this point of view, Master Schultz believes that artificial intelligence can dig out the emotions embedded in the human brain through technology, and it can go deep into the brain and discover the marketing value. PAR is always a coordinated and integrated marketing model. For example, participants in the conference can get a bottle of "customized personality" drink matching the test results after participating in the interaction and getting personality analysis. This powerful analysis based on Baidu's deep knowledge map system and the deduction and learning ability of artificial intelligence make PAR's marketing concept really fall into the actual marketing process. [12]

Traditional marketing can't get multi-dimensional data, so it can't establish contact among enterprises, consumers and marketing links, and can't perceive the tiny demand differences among individuals, so as to realize targeted marketing. In the marketing with the participation of intelligent technology, machine modeling can effectively establish

the multi-dimensional relationship between subjects, realize the communication between various departments and marketing links of enterprises, and realize comprehensive marketing. On the other hand, enterprises can use machine algorithms to achieve precise marketing according to individual needs through consumer insight.

Applicability analysis: The theme of this paper is artificial intelligence marketing, and PAR theory is a new theory created by Don E. Schultz in combination with the marketing reform in the era of artificial intelligence [13]. He gave perfect theoretical guidance to artificial intelligence marketing, so this method fits well with the thesis, and for the optimization of marketing, the author's thesis results are also based on this theory.

1.2.3 Overview of Artificial Intelligence

Professor Nelson gave such a definition of artificial intelligence: "Artificial intelligence is a subject about knowledge-the science of how to express knowledge and how to acquire and use knowledge." Another professor Winston of the Massachusetts Institute of Technology in the United States believes that "artificial intelligence is to study how to make computers do intelligent work that only people can do in the past." These statements reflect the basic ideas and contents of artificial intelligence. That is to say, artificial intelligence is the basic theory, method and technology of studying the laws of human intelligent activities, constructing artificial systems with certain intelligence, and studying how to make computers do the work that needed human intelligence before, that is, how to use computer software and hardware to simulate some intelligent behaviors of human beings.

Artificial intelligence derives from information technology. It is often used

interchangeably with notions like automation or robotization. It also tends to be confused with machine learning or algorithm application. According to Oxford Dictionary, artificial intelligence is "the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages" ("artificial intelligence | Definition of artificial intelligence in English by Oxford Dictionaries", 2019). The technology based on artificial intelligence is able to imitate the cognitive functions that we attribute to the human mind, including the ability to solve problems and learn (Syam, Sharma, 2018). The role and of artificial intelligence is to process and identify the acquired data and then to perform certain tasks. This is the definition of the so-called Artificial Narrow Intelligence, which functions and carries out tasks in a defined area (Shanahan, 2015). The second type of artificial intelligence is Artificial General Intelligence, whose scope of intellectual capacity is comparable to that of the human brain (Sterne, 2017). The current potential of artificial intelligence works in a narrow area, and tasks are performed thanks to the advancement of three technologies: machine learning, deep learning, and natural language processing. [14]

The main development history of artificial intelligence

Artificial intelligence has mainly gone through five stages of development. See Table 1.1 for details.

Table 1.1 – Artificial intelligence development history table

Stages	Time	Development content
1	1950s	The concept of artificial intelligence was first proposed.
2	1960s	The emergence of expert systems has brought new vitality to research in the AI field.
3	1970s	The emergence of the fifth generation of computers has led to the rapid development of AI.
4	1980s	The emergence of expert systems has brought new vitality to research in the AI field.
5	1990s	Due to the rapid development of network technology, especially Internet technology, AI has begun to transform from an intelligent topic discussion to a distributed AI discussion based on the network environment.

Introduction to Artificial Intelligence

In the field of artificial intelligence, it generally includes key technologies such as machine learning, knowledge mapping, deep learning, natural language processing, human-computer interaction, computer vision, biometric identification, AR/VR and so on. The implementation of artificial intelligence in practical fields benefits from the progress of three technologies: machine learning, deep learning and natural language processing.

Machine learning (ML)

Machine learning has taken artificial intelligence to a higher level, one above the level of following a set of predefined rules. Therefore, ML has changed the role of algorithms that have been used so far with artificial intelligence. ML has enabled computers to learn by themselves based on the available data by establishing links between individual pieces of data. Thanks to these capabilities, ML makes it possible to

draw conclusions and form generalizations on the basis of performed analyses (McIlwrAIth, Marmanis, & Babenko, 2017). ML comes in many forms and may be presented as pattern recognition, statistical modelling, data exploration, knowledge discovery, predictive analytics, data analytics, adaptive systems, self-organizing systems, and many more (Domingos, 2016). [15]

Deep learning (DL)

Deep learning (DL) is a higher level of ML because it is based on learning algorithms that do not need to be managed manually. DL, taking advantage of big data and computing power (of, e.g. server farms, CPU power, cloud computing), makes it possible to decipher and provide the result for a new piece of information instantly (Alpaydin, 2016).

Natural language processing (NLP)

Natural language processing is one of the applications of ML and DL, AIming at speech recognition. Many years of research in this area have made it possible to work on large amounts of data (text samples) that act as sources of the context, the vocabulary, the syntax, and the semantic meaning (Alpaydin, 2016). Advancements conducted in those technologies have enabled the development of artificial intelligence in the areas of voice, text, and image recognition, decision-making, and autonomous robots and vehicles. Practical applications can be met for each of these areas. Voice recognition is available, for example, in smartphones (e.g. Siri, Google Assistant). Text recognition solutions are used as virtual assistants who deliver rapid answers (e.g. Deakin University and IBM Watson). Image recognition is used for payment approval, thanks to comparison face image the system can make payments (e.g. food chain KFC). Decision-making system is available for educational purpose – IBM Elements is

dedicated for teachers to support them in student assessment and to deliver creates recommended individual development path for each student. Finally, autonomous robots and vehicles are used in the warehouses to manage the stock (e.g. in Amazon Kiva system).

Expert system

Expert system is an important branch of early artificial intelligence, which can be regarded as a kind of computer intelligent program system with special knowledge and experience. Generally, knowledge representation and knowledge reasoning techniques in artificial intelligence are used to simulate complex problems that can usually be solved by domain experts. Generally speaking, expert system = knowledge base+inference engine, so expert system is also called knowledge-based system. It is a program system with a large amount of specialized knowledge and experience, which applies artificial intelligence technology and computer technology. An expert system must have three elements: domain expert knowledge, simulating expert thinking, and reaching expert level.

The basic workflow of the expert system is that the user answers the questions of the system through the man-machine interface, the inference engine matches the information input by the user with the conditions of each rule in the knowledge base, and stores the conclusions of the matched rules in the comprehensive database. Finally, the expert system presents the final conclusion to the user. Here, the expert system can also explain the following questions to the user through the interpreter: Why should the system ask the user this question (why?). How did the computer come to the final conclusion (how?). Domain experts or knowledge engineers acquire knowledge in expert system through special software tools or programming, and constantly enrich and

improve the knowledge in knowledge base. The main development tools are GensymG2, CLIPS, Prolog, Jess and MQL4.

Big data

Big data, an IT industry term, refers to a data collection that cannot be captured, managed and processed by conventional software tools within a certain time range. It is a massive, high-growth and diversified information asset that needs a new processing mode to have stronger decision-making, insight and discovery and process optimization capabilities.

Big data has five characteristics: Volume, Velocity, Variety, Value, Veracity. It doesn't have a statistical sampling method; it just observes and tracks what happened. The usage of big data tends to use predictive analysis, user behavior analysis or some other advanced data analysis methods.

Big data has the following functions:

A. Establish intelligent supply chain responding to production and demand signals.

B. Market segmentation, understanding customer purchasing behavior.

C. Implement market-driven pricing and promotion strategies.

D. Closely monitor business, control controllable costs and capital expenditure.

E. Ensure the consistency between field implementation and enterprise strategy

1.2.4 Overview of artificial intelligence marketing

The essence of artificial intelligence marketing is to empower key marketing links such as data processing, content delivery and effect monitoring through machine learning, natural language processing and knowledge mapping based on artificial intelligence, optimize delivery strategy and enhance delivery pertinence. Its core is to

help the marketing industry save costs, improve efficiency and tap more marketing channels.

1.3 Research summary

1.3.1 Problems in traditional marketing

1) The marketing platform is not perfect.

2) The marketing mode is single and lacks organic combination.

3) Information collection and feedback lag behind, and decision-making is slow.

4) The action lacks data support and the execution process is cumbersome.

5) The correlation between data is weak, and the marketing link is blocked.

1.3.2 Research status of artificial intelligence technology in the field of marketing

With the increasing application of artificial intelligence in marketing field, related research and discussion are also launched. Wierenga (2010) pointed out that as early as around 1990, artificial intelligence technology had a certain development and application in the marketing field, at that time, it was mainly the development of expert system. Expert system is mainly used in four aspects: finding the most suitable promotion way, recommending the most effective advertising execution way, screening new products, and automatically translating data reports. He believes that artificial intelligence technology can help marketers get more information about consumer interaction, compare market segmentation based on consumer interaction information with market segmentation based on traditional demographics, and get more useful information to predict consumer behavior [16].

Forrest (2014) pointed out that in addition to being able to predict consumer

behavior trends and analyze consumer media consumption patterns, the emerging artificial intelligence technology can even distinguish consumers' personalities by analyzing the languages used by consumers on social media websites, and predict major events that may occur in consumers' lives. He also pointed out that artificial intelligence technology will communicate and interact with consumers in the future, and even help consumers make complex purchase decisions.

Lamm (2018) discusses the role of artificial intelligence in brand marketing, and thinks that artificial intelligence can help brands maintain consistency when communicating with consumers, and can create personalized communication interfaces with consumers based on their personal information. Rosenberg (2018) believes that artificial intelligence can make marketing smarter, more efficient, more beneficial to consumers, and ultimately achieve better marketing results. [17]

Kietzmann, Paschen and Treen (2018) discussed how to use artificial intelligence technologies such as visual recognition, speech recognition and machine learning to better understand consumers from the five stages of consumer purchase decision-making process, such as problem recognition, information collection, alternative evaluation, purchase decision and post-purchase evaluation. Joly (2019) predicted that artificial intelligence technologies such as speech recognition, visual recognition and natural language processing will bring more innovations to the marketing industry in 2019.

Although the research on artificial intelligence marketing in China started late, it developed rapidly. Li Guangdou (2016) thinks that the combination of artificial intelligence and marketing is the third iteration and upgrade of marketing. In the era of artificial intelligence, the marketing competition is who can better read users' minds and

provide users with instant and personalized feedback and solutions.

Ding Daoshi (2016), taking Baidu as an example, pointed out that artificial intelligence has brought new marketing value to brands, and the application of artificial intelligence in scene marketing can enhance user value.

Li Jian (2017) believes that artificial intelligence will solve the problems of "relevance", "immediacy" and "individuation" that always plague marketing.

Ding Junjie (2018) pointed out that artificial intelligence is a "new species" for marketing, and discussed the changes brought by artificial intelligence to marketing from three aspects: advertisers, marketing service organizations, marketing processes and models.

The Research Report on the Landing of AI+ Marketing Application in China, jointly released by iResearch and Xunfei AI Marketing Cloud, comprehensively interprets the marketing industry in the era of artificial intelligence from four aspects, such as development status, advertiser cognition, typical application and development trend, and points out that the application of artificial intelligence technology will bring great value to marketing, and will gradually and deeply intervene in all aspects of marketing, from user insight, strategy formulation to creative generation, intelligent delivery, effect analysis and re-marketing, etc. [18]

1.4 Finding and Discussion

For the research of the subject, the author consulted a large number of documents. At the same time, some typical examples are analyzed. This paper summarizes the marketing problems that artificial intelligence technology can solve. At the same time, it also analyzes the implementation problems of artificial intelligence marketing. The

specific results are analyzed as follows:

1.4.1 What can artificial intelligence do for us

In decision-making. Artificial intelligence technology can optimize marketing decisions. "Pin you Interactive" has designed a marketing decision product MIP (Marketing Intelligence Platform) based on machine learning and big data processing technology, which can help enterprises to make decision prediction from product positioning, consumer insight and media planning. Infinite Analytics of the United States has also made remarkable achievements in this respect. One of the two machine learning systems developed by Infinite Analytics is used to predict whether consumers will click on an advertisement, which improves the delivery effect of online advertisements for a global consumer packaging product company and increases the return on investment of advertisements by 300%. The other one is used to improve the customer search and discovery process of an online retailer in Brazil, which increases the annual operating income of this retailer by 125 million US dollars. [19]

Artificial intelligence automates the marketing workflow, makes some time-consuming steps (such as data integration and algorithm optimization, etc.) simpler, and the marketing team can focus more on strategic thinking and formulation. Emarsys, a marketing automation platform, commissioned research company Forrester to investigate 717 marketers in July 2017 and found that 79% of respondents believe that artificial intelligence will allow marketers to turn to more strategic jobs; 78% of the respondents said that their spending on artificial intelligence marketing technology will increase by at least 5% in the next 12 months.

On the Product side. Artificial intelligence provides an opportunity for enterprises to

empower themselves and improve their core competitiveness. Artificial intelligence can observe the market trend, excavate and predict the potential demand of the market, and complete the innovative design of products. In this respect, on the basis of big data, through artificial intelligence algorithm, enterprises can understand and grasp the market situation more clearly, and make accurate predictions, thus reducing the cost of product design. Therefore, enterprises can flexibly adjust their product strategies according to the monitoring results of market data.

On the other hand, artificial intelligence can solve the simplification problem of product design. Under the influence of artificial intelligence technology, product design has gradually changed from simplification to scene. In the past, product design often only focused on one problem, and each function point was isolated. Due to the maturity of artificial intelligence technology and the diversity of application scenarios, independent products that can meet the continuous needs of users can be easily displayed. It is the thinking direction for enterprises to meet the various needs of consumers in a more concise way. Especially, as an intelligent platform with the ability of perception, cognition, decision-making and action interaction, artificial intelligence robot is characterized by its ability to connect services. [20]

On the Price side. Artificial intelligence can solve the pricing problem. With the market saturation, intensified competition and the coming of the era of consumption upgrading, if enterprises want to take advantage of price leverage in the market, they must change their marketing thinking and set suitable prices for different customers. Artificial intelligence based on big data technology can help enterprises achieve accurate pricing. Accurate pricing is to set prices according to the specificity of different customers, that is, personalized pricing. More importantly, the use of artificial

intelligence technology can achieve efficient dynamic pricing. Traditional pricing methods generally rely on manual judgment, which not only has the disadvantages of strong subjectivity and low accuracy. If artificial intelligence technology is adopted, these heavy tasks can be completed automatically and efficiently.

On the Place side. The influence of artificial intelligence on place mainly lies in service. The greatest value of artificial intelligence is that it can imitate the thinking mode of real people to the maximum extent, so as to better provide customers with pre-sales consultation and after-sales service and complete deep interaction with real people. With the development of artificial intelligence technologies such as speech recognition and natural language processing, customer service robots have developed from the first generation focusing on questions and answers to intelligent customer service robots integrating deep learning technologies. Intelligent customer service robots supported by big data can continuously improve their self-learning ability, understand the contextual meaning of customer information, and even analyze colloquial problems, identify the focus of problems, and provide personalized experience for customers, thus greatly improving the efficiency and level of service.

Natural language processing (NLP) can greatly improve the interaction of marketing. [21] In the special exhibition "Wonderland of the Planet", "Hungry" launched a voice ordering system, relying on intelligent voice equipment to realize the ordering process through voice interaction, thus saving the ordering time to the maximum extent. From waking up the system, saying the intention, purchasing goods, confirming the order and confirming the payment, based on the voice ordering system, the ordering process can be completed in the shortest five steps. For consumers who often face difficulties in choice, the intelligent recommendation made by the system

according to users' intentions can help them make decisions quickly. The workflow of the whole ordering system is as follows: firstly, based on speech recognition technology, the fuzzy natural language of users is transformed into accurate ordering instructions; Then, according to the ordering instructions, match the corresponding purchasing channels for users, such as another order, random order, search, etc. Finally, according to the corresponding strategies, we recommend suitable restaurants and delicacies for users. This has changed the traditional way of ordering food, which makes the participation and interaction of consumers more humane.

In terms of promotion. Artificial intelligence can make enterprise promotion more accurate and effective. Artificial intelligence can improve the ability of orientation and personalization. According to the characteristics of old customers, machine learning can be used to build a model, and according to this model, users matching with consumption habits can be found in the database. By ranking the similarity between new and old users, the target customers can be selected to push offers to them. With the help of artificial intelligence, promotional activities can interact with consumers in a personalized way, so that their interactive experience is better and the effect is better. [22]

Personalize recommended marketing information by using knowledge graph function, and launch personalized marketing. Almost every day, I receive all kinds of recommendation information, from news and shopping to dining and entertainment. Personalized recommendation system, as an important means of information filtering, can recommend suitable products or services to people according to their habits and hobbies. However, the traditional recommendation system is prone to data disorder, and introducing knowledge graph as auxiliary information into the recommendation system

can effectively solve these problems. With the help of artificial intelligence, Outbrain Company in the United States pushes the produced content to the selected netizens who are more likely to read, which greatly reduces the work of marketers in selecting recommenders from massive information, and can ensure that the information the company wants to convey is read by the target audience with a high probability. [23]

1.4.2 What are the implementation problems

The main implementation problem is that enterprises are deeply influenced by traditional marketing thinking, and employees do not have artificial intelligence thinking. Moreover, they lack professional knowledge of artificial intelligence, and it is difficult to implement marketing artificial intelligence.

Another problem is that the artificial intelligence marketing needs a batch of professional equipment, which needs to be updated in time.

The most important thing is that the implementation of artificial intelligence marketing needs sufficient funds. If there are not enough funds, enterprises cannot carry out employee skills training and equipment upgrading.

1.5 Estimated result

The author thinks that the combination of artificial intelligence and marketing is an important direction of future marketing development. This is inevitable. I think artificial intelligence has brought many benefits to marketing. In the future, artificial intelligence will continue to reshape technology and business. Marketers need to be fully prepared for the ever-changing environment, and take it as one of the daily tasks at present, adapting to the human-driven world. Due to the wide application of artificial

intelligence, customers can see more personalized messages and advertisements and experience better customized marketing services. The wide application and implementation of artificial intelligence will bring marketing revolution to marketers, and marketing work will become more and more intelligent.

The thesis will discuss how to solve the marketing problems exposed by the target enterprises. According to my own point of view, the author made an estimate of the research results:

A. Reshape the marketing mode driven by intelligent technology.

B. Build an integrated intelligent marketing platform.

C. Constructing knowledge map to speed up marketing decision.

D. Insist on using data to guide the implementation of marketing actions.

E. Strengthen relevance connection and realize comprehensive marketing.

1.6 Methodology

The research methods of this paper mainly include the following:

Literature research method

After implementing the selected topic, the author collected, read and sorted out a large number of literature materials about artificial intelligence and grape wine industry marketing (main resource websites: 1.www.mendeley.com, 2.www.marketingweek.com, 3.www.adweek.com, 4.www.warc.com, 5.www.cnki) Understand the current research situation, and extract some core ideas as the writing support of this paper. Through reading and data consulting, I have deepened my understanding of the research object and got some writing inspiration.

Case study method

Case analysis is the main analysis method in this paper. This paper studies the artificial intelligence technology to optimize the marketing strategy of traditional industries and design new marketing strategies. The author will discuss the specific case of grape wine Company ("Changyu") in China market. The conclusion is based on the author's analysis of the collected examples.

Chapter summary: This chapter is the first chapter of the thesis, which mainly discusses the theoretical basis and research background of the selected topics. The research objectives are put forward. McKinsey 7s Model, PEST analysis and PAR theory are introduced. The theoretical basis of marketing and artificial intelligence marketing is discussed in detail. The current marketing situation of grape wine industry and the application of artificial intelligence in marketing are discussed. The marketing problems that artificial intelligence technology can solve and the existing implementation problems are studied. The problems to be solved and the predicted optimization results are put forward. Finally, the research methods are expounded.

2 COMPREHENSIVE ANALYSIS OF TARGET ENTERPRISES AND ARTIFICIAL INTELLIGENCE MARKETING

2.1 Introduction of target enterprises

2.1.1 Brief introduction of the enterprise

"Changyu Group" (hereinafter referred to as "Changyu") was founded in 1892 by Chinese businessman Mr. Zhang Bishi. In order to realize the dream of "prospering the country by industry", Changyu Brewing Company was established in Yantai, Shandong Province, China, which opened the prelude of China's grape wine industrialization.

After a hundred years of development, Changyu has rapidly grown into the largest production and sales company of grape wine in China and even in Asia. It has one holding listed company, one holding subsidiary, four wholly-owned subsidiaries and one branch. It has more than 4,000 employees, with total assets of 2.1 billion yuan and net assets of 1.48 billion yuan. [24]

Changyu's products sell well at home and abroad. The sales network covers the whole country, with 24 branches, more than 170 distribution offices and 9 functional management departments in various provinces and cities, and a modern management system based on information technology and computer network has been established. The company's main business products include four categories: grape wine, Brandy, sparkling wine and health wine, with an annual comprehensive output of more than 200,000 tons. In 1993, the company obtained the right to export foreign trade, and the main export varieties are health wine, grape wine, health care drugs, etc. It is mainly sold to more than 30 countries and regions such as Hong Kong, Macao and Taiwan, Southeast Asia, the Netherlands, the United States, Belgium, Japan, South Korea and

Panama.

2.1.2 Tthe status of enterprise development

In 1915, Changyu's Kaya Brandy, Red Rose grape wine, Qiong Yao Juice and Riesling White grape wine won four gold medals and certificates of excellence at Panama Pacific World Expo.

In 1987, due to Changyu Company's outstanding contribution to international grape wine, Yantai City was officially named "International grape wine City" by the International Grape Wine Bureau, and Yantai City was accepted as an observer of the International Grape Wine Bureau.

In 1993, "Changyu" trademark was recognized as a well-known trademark in China by the State Administration for Industry and Commerce. The company actively implements the international brand strategy, and has now developed into the first brand of grape wine in Asia.

From 1997 to 2002, the comprehensive market share of Changyu products ranked first in grape wine industry for four consecutive years, reaching 21.42% in 2002. The Group Company has been awarded the titles of "National Light Industry Excellent Enterprise", "Shandong Light Industry Star Enterprise" and "Shandong Light Industry Pioneer Enterprise" by China National Light Industry Association. [25]

The company is market-oriented, benefit-centered, development and innovation-oriented, vigorously promotes technological innovation and management innovation, and comprehensively improves the quality of enterprise, so that the company maintains a healthy and steady development momentum, and the economic benefits are greatly improved every year. In 2000, the sales revenue was 1.66 billion yuan, and the profits

and taxes were 350 million yuan, increasing by 22% and 38.6% respectively over the same period in 1999.

2001-2005 is the key period for Changyu Group's development, facing the opportunities and challenges of China's entry into WTO. During the "Tenth Five-Year Plan" period, the company will speed up its integration with international standards, expand leading industries, develop related industries, and cultivate economic growth points; Improve the innovation ability of enterprises, so that Changyu Group will continue to maintain its leading position in China's grape wine industry and strive to become a well-known enterprise in the international grape wine industry.

Table 2.1 – Financial statement of Changyu Group in recent three years

	2020	2019	Increase (2019-2020)	2018
Operating income	3,395,402,001	5,074,025,899	-33.08%	5,142,244,740
Net profit	470,860,587	1,141,367,296	-58.75%	1,042,632,929
Total assets	13,102,481,541	13,764,855,252	-4.81%	13,117,729,052

2.2 Enterprise marketing analysis (based on 4P theory)

Faced with market opportunities and fierce challenges from the grape wine industry, Changyu determined its future development strategic goals: According to Changyu's 2020 financial report, the annual operating income was 3.395 billion yuan, down 33.08% from the previous year; The net profit attributable to shareholders of the parent company was 470 million yuan, down 58.75% from the previous year. Zhang Yu set the operating income target for 2021 as "no less than 3.8 billion yuan", and continued to explore the Chinese grape wine market.

2.2.1 Product strategy analysis

Over the years, through the development of new products and the adjustment of product structure, Changyu has formed a product line with complete and moderate length, width and depth and balanced development, and a relatively perfect product structure of "low-grade wine occupies the market, middle-grade wine makes profits, and high-grade wine tree image". At present, Changyu's main products are four categories: grape wine, Brandy, Champagne and Health Wine.

Before 1980s, Changyu's products were mainly brandy. However, in recent years, Changyu has introduced Cabernet Sauvignon, winery wine and barreled custom-made wine with dry red grape wine as its focus. Grape wine products account for 70% of the company's total sales revenue. Is the company's main profit contributor. In order to introduce Changyu's product structure in detail, the author investigated and sorted out Changyu's official shopping mall in JD.COM, and showed its grape wine product structure in Table 2-2. Take Changyu grape wine's self-operated flagship store in JD.COM as an example. Changyu sells grape wine and is divided into winery wine, Cabernet Sauvignon, classic dry red, classic dry white and drunk poetry fairy; According to brewing, it can be divided into natural grape wine, enhanced grape wine, fragrant grape wine and grape wine distilled liquor; According to the grade, it is divided into collection grade, cellar grade, special selection grade and preferred grade; Divided into white grape wine, red grape and wine peach grape wine by color; Divided into Merlot, Chardonnay, Syrah, Sauvignon Blanc, etc. [25]

Table 2.2 – Changyu Group product and price analysis table

Product	Price	Positioning
Ice wine	200 RMB	Further strengthen the image of high-end products and improve the gross profit margin
Chateau wine	150 RNB	Enhance the brand's high-quality image and expand its influence
Xiebaina	30-150 RNB	Major profitable products
Dry red wine 1	80 RNB	Major profitable products
Dry red wine 2	40 RNB	Improve product purchase rate
Chateau wine	150 RNB	Enhance the brand's high-quality image and expand its influence

In packaging, the company uses different packaging materials for different series and grades of products. For high-grade wines, solid wood is used in the outer box, middle-grade wines are packed in cardboard boxes, and low-grade wines are packed in ordinary cartons. The bottle shape is the shape of a conventional grape wine bottle, which is packed in 750 ml.

Characteristic analysis: There are many kinds of products, many levels of products, and many categories of target customers.

2.2.2 Price strategy analysis

Changyu is the largest grape wine manufacturer in Asia. So he basically sets the price as a market leader. Adopt cost plus pricing method and cognitive guidance pricing method. To develop the market and increase the market share as the goal. Changyu implements national unified payment and delivery, ensuring that there is no discount on the return of funds, and the rebate dealers take the price surplus as the profit source.

Changyu also adopts self-built raw material base to ensure future competitive
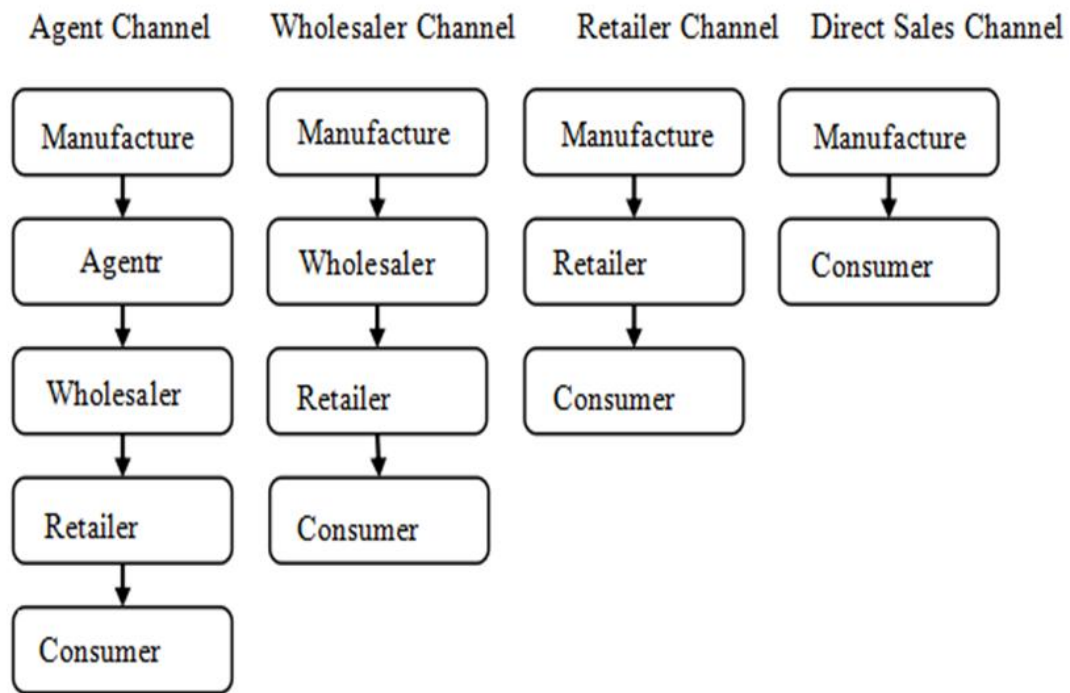
advantage. The Great Wall grape wine suffered a double impact. In order to prevent the decline of profits, the company adopts the most direct method, that is, raising prices to recover the loss of profits. [26]

In the past few years, Changyu's products have been increasing in price. Since many years ago, Changyu has raised the ex-factory price by nearly one time in some areas as a fare for distributors to ensure the investment in advertising and promotion expenses, and distributors have gradually evolved into real "distributors". This is in sharp contrast to the continuous price reduction of other second and third tier brands. In order to introduce Changyu's product price strategy in detail, the author investigated and sorted out Changyu's official shopping mall in JD.COM, and showed its grape wine product price in Table 2.2.

Characteristic analysis: The prices of different types of products vary greatly.

2.2.3 Place strategy analysis

At present, Changyu adopts a typical traditional channel system combining direct and indirect channels, with indirect channels as the main channel and direct channels as the auxiliary channel. In recent years, in the market disputes, the company constantly changed its marketing mode to meet the needs of the market. Carry out the brand manager system in the market in order to achieve the synchronous development of the four wines. Under the leadership of large regions, the branch manager system divides the whole country into three branches, aiming at establishing a nationwide sales network system and expanding its own market share of grape wine. At present, Changyu has adopted four channels. The author has sorted out these four marketing channels, and the specific situation is shown in Picture 2.1. [27]

Agent Channel

Manufacture → Agentr → Wholesaler → Retailer → Consumer

Wholesaler Channel

Manufacture → Wholesaler → Retailer → Consumer

Retailer Channel

Manufacture → Retailer → Consumer

Direct Sales Channel

Manufacture → Consumer

Picture 2.1 – Changyu Group place flow chart

Moreover, enterprises are also divided into online and offline channels. Offline channels are mainly agents, wholesalers and retailers. Offline is mainly a direct sales channel. Retailers in the retailer channel are mainly Wal-Mart, Auchan and other big shopping malls. The direct sales channels are roughly divided into three directions: Taobao flagship store, JD.COM self-operated store and official website store.

With the increasing popularity of cement, it has changed people's working and living habits, and also changed the proportion of marketing channels of enterprises. The transparency of information makes the competition in grape wine industry increasingly fierce, and grape wine enterprises urgently need to develop online channels. Therefore, in recent years, Changyu's direct sales channels have developed rapidly. It has taken up a large part of the company's channels.

Characteristic analysis: The selling channels of enterprises are numerous and

complicated. The transaction volume is large. [28]

2.2.4 Promotion strategy analysis

Changyu's promotion and advertisement are relatively mature. Every year, the advertising cost of enterprises in CCTV (China CCTV) and other TV media is stable at about 50 million yuan. Mainly used to promote product image or cooperate with the launch of new products. As an important means of marketing, grape wine Museum, Castel Winery, grape wine Club and grape wine Appreciation magazine are closely integrated with actual production and sales. In addition, Changyu is carried out more through various promotional activities. In the aspect of advertising promotion, enterprises and products are mainly promoted by means of local traffic broadcasting, local TV stations, professional magazines and other media to deepen the brand impression of products. In terms of personnel sales, the company has its own sales personnel, who directly contact with major customers, sell products, answer objections and make efforts to facilitate transactions. In addition, in the big shopping malls, supermarkets and hotels in the target market, special sales personnel of enterprises are dispatched, and several salesmen are temporarily recruited from various places as helpers to facilitate the transaction. In terms of public relations promotion, enterprises launch a public relations activity every year to increase their popularity. For example, to provide wine sponsorship for large-scale conferences or other activities hosted by local governments, so as to expand the official popularity of the brand. Or actively carry out folk sponsorship activities. For example, building a park named after an enterprise and making donations to the affected people in case of natural disasters. In terms of business promotion, consumers are encouraged to purchase by means of complimentary items,

lottery and coupons. For distributors, we will attract excellent distributors to distribute enterprise products in the form of price discount, discount and providing some free goods. [28]

Characteristic analysis: promotional activities are based on radio, local TV stations, professional magazines and other media. Activities are organized frequently.

2.3 Analysis of enterprise marketing problems

Grape wine, as the most dynamic subdivision of wine market, has attracted more and more enterprises to enter this market. On the one hand, the fierce market competition promotes the continuous optimization and upgrading of the marketing strategy of enterprises, on the other hand, it also exposes the existing marketing problems. By investigating a large number of cases, the author finds that the traditional 4P theory put forward by Jerome Macarthy is widely used in the marketing of grape wine in China. Marketing is divided into four links: Product, Price, Place and Promotion. However, with the continuous development of social economy and the continuous reform and innovation of science and technology, the development of artificial intelligence technology has made a qualitative leap. Marketing also needs to enter the intelligent era. When marketing enters the intelligent era from the Internet era, consumer demand becomes more important, and wine marketing activities also need to show intelligence. Therefore, the traditional 4P marketing theory centered on products is no longer suitable for the current market situation. [29]

The author thinks that facing such a situation, it is necessary to optimize the marketing strategy and mode of enterprises. In order to optimize the marketing strategy, the author analyzes the current enterprise marketing problems from the aspects of

Pattern and Platform, Agility and Action, Relevance and Response by using PAR theory from the angle of artificial intelligence.

2.3.1 Pattern and Platform

1) the marketing platform is not perfect.

All kinds of online and offline platforms belong to the marketing channels of enterprises. Changyu's marketing mainly includes traditional shopping malls, Taobao flagship stores, self-operated stores in JD.COM, official website stores of the company and some social media, etc. With the development of Internet technology, the online market of grape wine is expanding. Online channel platforms (Taobao flagship store, JD.COM self-operated store, Changyu Company official website store) bring great challenges to the traditional sales channels and marketing of enterprises. Although the offline market of enterprises has advantages, and the offline channel platform is relatively stable under the guidance of traditional marketing strategies, it still receives considerable impact.

There are many problems with the offline platform. The most direct problem is that the business area of the offline market of enterprises is limited, there are not many kinds of grape wine on the platform, and there is the shortcoming of slow product update, and sometimes there will be insufficient inventory. Off-line platforms not only have insufficient supply, but also sometimes have incomplete liquor varieties. There are some shortcomings in the management of offline platforms, such as inadequate management of many managers and confusion of offline platforms. Compared with online marketing, offline traditional platforms still have the shortcomings of slow and incomplete information update. For this reason, enterprises are also trying to build their own online

marketing platforms, such as official websites and WeChat WeChat official account. Although enterprises have abundant content resources and sufficient funds. But it is technically short-board. Most of the marketing teams are engaged in traditional marketing work, but the concept of artificial intelligence and digitalization is not strong, and they are not skilled in the practical operation of new media technology, which leads to the single content and shallow development of the enterprise platform, which can't really communicate with customers, and can't accurately process information, and is only used as a way of content display. Compared with the specialized network e-commerce, the self-built platform of enterprises is imperfect and lacks competitiveness.

2) The marketing mode is single and lacks organic combination.

At present, it is the era of intelligence, and the artificial intelligence technology is developing rapidly. However, the marketing of grape wine is influenced by the concept and technology, and it is still concentrated in the traditional offline retail, which pays little attention to intelligent marketing and lacks changes. Even if digital means are adopted, it is often only aimed at a certain link, and the multi-party integration of the whole marketing process is not realized.

Grape wine is backward in enterprise concept and single in propaganda way. The popularity of mobile devices has spawned a variety of new social media (including Weibo and WeChat, which are relatively mature, and short video platforms such as Tik Tok and Aauto Quicker, which have gradually emerged in recent years). These platforms have attracted a lot of customers' attention and become important marketing channels for many products. For example, some merchants invite online celebrities to post short videos for product promotion. Through their influence, they have driven consumption and achieved excellent sales results. However, grape wine enterprises have

little publicity information on such media, and they are still used to promoting enterprises and products through radio, television, professional magazines and other media, and attracting consumers with shop discounts. These methods are not only inferior to the new media in speed of dissemination and promotion, but also the audience of information reception is limited to a small area around the store, making it difficult to accumulate stable consumers.

2.3.2 Agility and Action

1). Information collection and feedback lag behind, and decision-making is slow

The author thinks that there are two aspects to this problem. On the one hand, it is reflected in the planning stage. Traditional grape wine marketing points to sales. It is to carry out a series of marketing activities to transmit product information and additional product information to customers and arouse their desire to buy. This means that in the whole marketing process, enterprises lack contact with consumers, which leads to insufficient data acquisition and weak data timeliness. The resulting problems will be many. The author thinks that there are the following problems: enterprises lack research basis when researching and making plans, and the selected topics are difficult to satisfy customers' interests. This will lead to a backlog of inventory. When organizing marketing activities, because of the lack of specific information of customers, marketers will have subjective consciousness and make wrong judgments on the contents promoted by target customers.

On the other hand, enterprises rely on traditional methods for data research, which leads to low data accuracy, less coverage, time-consuming, laborious, inefficient and expensive.

Consumers will release a large amount of data information in their daily life. In addition to the multi-dimensional data about customers' preferences, such as the usual offline purchases and subscriptions in online shopping malls, a large amount of data not directly related to enterprise products will also affect the marketing effect. However, after manual data collection, enterprises use the usual sampling analysis, which may affect the quality of analysis results because of manual calculation errors, incomplete information extraction and other issues. Therefore, the marketing decision-making cycle of enterprises is correspondingly lengthened, and the effectiveness of decision-making is greatly reduced.

2) The action lacks data support and the implementation process is cumbersome

The marketing operation mechanism of grape wine is traditional, which is based on the accumulated experience of marketing system for many years. It is impossible to accurately grasp consumers' demands, push advertisements in real time and deliver products in time. Traditional grape wine marketing is top-down in content publishing, which is often based on the product content itself, pushing back potential customers from the existing theme content, and carrying out corresponding promotion and publicity. In addition, due to the limitations of human research, grape wine enterprises lack sufficient data support from marketing decision-making to action implementation. In this case, the action efficiency is low, and the marketing effect is poor.

In addition, there are still some problems in enterprises, such as imperfect functional departments and unclear division of labor, and the marketing actions will appear tedious in the implementation process. In most work contents, the work that you are really good at actually takes less than half of the time, but it takes more time to arrange meetings, research and other office chores. In fact, these tasks can be easily accomplished through

intelligent services or machine programs. At present, artificial intelligence technology can realize the simultaneous data collection and analysis.

2.3.3 Relevance and Response

The correlation between data is weak, and the marketing link is blocked

By studying the data utilization of target enterprises in marketing from the perspective of artificial intelligence, we can find that it is difficult for enterprises to grasp the correlation among them. Relevance means that enterprises use the powerful data mining and algorithm analysis technology of artificial intelligence to classify, cluster and regress various kinds of data such as market and customers, find the mutual relations hidden among the data, establish connections and form a complete data system. Under the environment of big data, the traditional data collection methods of enterprises are restricted by manpower and technology, and the obtained consumer data information is incomplete, and many information not directly related to grape wine cannot be captured. When enterprises analyze data, the traditional manual analysis and calculation ability is low, and they can't understand the data thoroughly. Therefore, enterprises can't establish the relationship between customers and market information, customers and enterprises, products and services in marketing activities. Enterprises lack the circulation of relevant data, and the business between departments is fragmented. Traditional grape wine marketing only includes propaganda and sales, which does not meet the concept of "whole product development, packaging design and promotion and sales" required by intelligent marketing. The information occlusion between enterprise departments brings the occlusion of all links in the whole marketing process. It can't satisfy customers' individual purchase intention in product design and

service supply. At the channel communication level, the accurate push of published information cannot be guaranteed. At the level of price setting, it can't meet the value expectation of consumers. At the promotion level, it is impossible to accurately trigger the purchase impulse of each consumer

2.4 Analysis of the current situation of artificial intelligence marketing in the target market

Facing the enterprise marketing problems analyzed in Section 2.3, the author plans to use artificial intelligence technology to optimize the enterprise marketing strategy and carry out innovative marketing. Therefore, it is necessary to study the current situation of artificial intelligence marketing in the current market of enterprises (China market). It is also necessary to provide a key example to provide experience for problem solving.

2.4.1 The development of marketing technology in China

Although artificial intelligence technology is still in its infancy in China, its application level and solving practical problems are not inferior to those of leading international Internet companies. With the development of artificial intelligence technology, China's marketing is also constantly developing, gradually entering the era of artificial intelligence marketing. On the whole, the development of China's marketing technology can be roughly divided into four stages, namely, traditional marketing based on mass media technology, Internet technology + marketing, big data technology + marketing, artificial intelligence + marketing, and each stage has overlapping influence, which makes the marketing focus of each stage upgrade. The traditional marketing stage

pays more attention to the impact on a wide range of consumers, while the internet plus marketing stage will consider interaction and communication on the basis of contact. In the big data + marketing stage, it starts to pay attention to marketing accuracy and personalization, and in the AI+ marketing stage, it starts to comprehensively optimize the efficiency of each link. With the deepening application of AI technology in marketing, it will not only improve industrial efficiency, but also put forward better solutions in terms of contact, interaction and precision. In the future, AI technology will have a profound impact and change on marketing.

Traditional marketing: [30]

Traditional marketing is a kind of trade marketing that emphasizes providing as many products and services as possible to as many customers as possible. After long-term development, it has formed a relatively solid theoretical and practical foundation, and consumers have become accustomed to this fixed model. Consumers have strong communication in the process of consumption, can see the real products and experience the leisure fun of shopping, and at the same time have won the trust of the public.

The main purpose of marketing at this stage is to influence more consumers. Compared with traditional offline marketing, the emergence of mass media makes marketing information cover a very large number of consumers.

Internet plus marketing:

Internet plus marketing is a new marketing method based on the Internet, which uses the interaction of digital information and network media to achieve marketing goals. With the popularization of Internet, marketing has more possibilities of interaction on the basis of wide coverage. Marketing is no longer a one-way information dissemination activity, but an interaction and communication with consumers.

Big data + marketing:

Big data marketing is a marketing method based on a large amount of data from multiple platforms and relying on big data technology, which is applied to the Internet advertising industry. The core of big data marketing is to make online advertising reach the right people at the right time, through the right carrier and in the right way. With the mature application of big data technology, various concepts and platforms of precision marketing appear constantly. At this stage, more attention is paid to the accuracy of marketing for user positioning.

Artificial intelligence + marketing: [31]

Based on the gradual penetration of artificial intelligence technology in the marketing field, all marketing scenes and links are more intelligent, and marketing efficiency is constantly improving. Marketing activities using artificial intelligence technology. The application of artificial intelligence core technology in every link and scene of marketing. Reduce marketing costs, improve marketing efficiency, and explore more innovative marketing models. Use computer vision, speech recognition, natural language processing, machine learning and other technologies to carry out marketing.

2.4.2 The application of marketing technology in China

In order to understand the development of artificial intelligence marketing in China, I did a lot of data surveys. Taking advertising as an example, I obtained the following main data:

Advertisers' understanding of artificial intelligence marketing technology.

Advertisers have a certain degree of understanding of AI-related technologies, including human-computer interaction (voice, etc.), blockchain, virtual reality,

biometric recognition, visual recognition, etc. In the field of AI technology, there are More than half of advertisers pay attention to AI technology application fields such as smart home and autonomous driving, followed by education (adaptive learning) and smart customer service. Detailed statistics results as illustrated in Picture. 2.2.
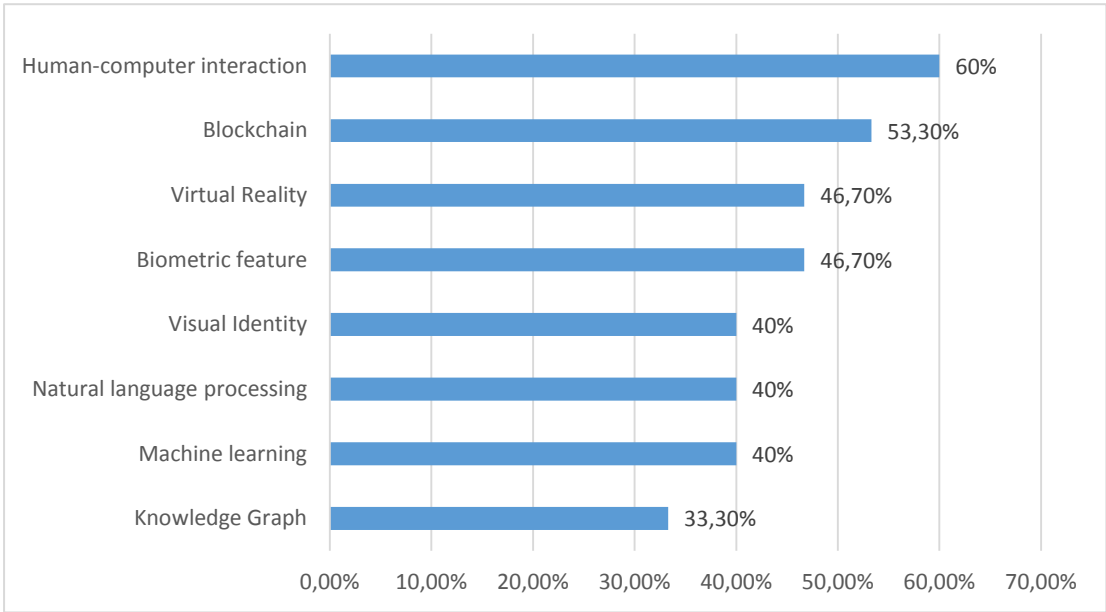
Picture. 2.2- Statistics chart of advertisers' understanding of artificial intelligence marketing technology.

Advertisers are paying attention to the field of artificial intelligence marketing.

Basically, half of advertisers are interested in smart home and autonomous driving, and more than one-third of advertisers are interested in autonomous learning, smart customer service, and new retail. Detailed statistics results as illustrated in Picture. 2.3.
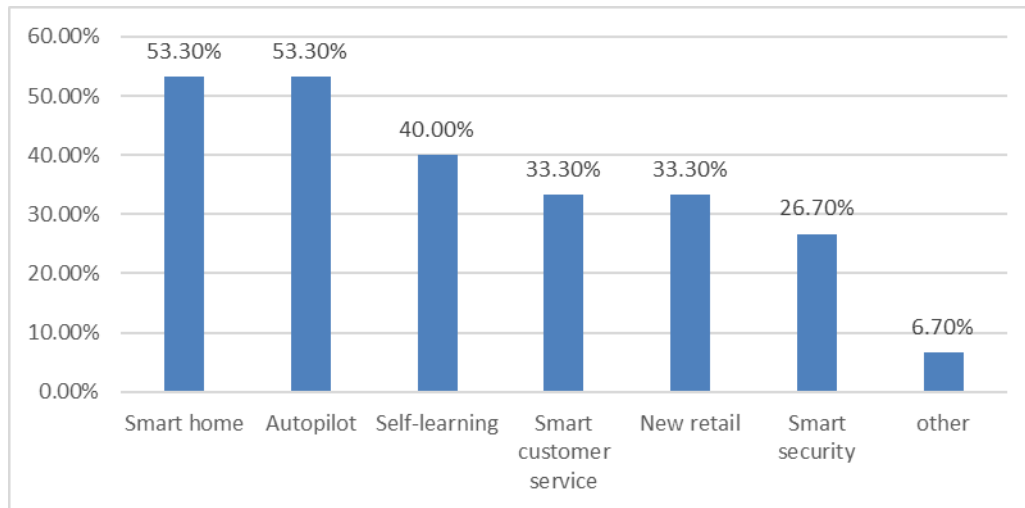
Picture. 2.3- Statistics chart of attention in the marketing field.

Advertisers' Attempts on AI + Marketing New Technology

According to research data, AR, VR, voice advertising, interactive advertising and other fields are AI+marketing new technology areas where advertisers have tried a high proportion. As voice technology gradually matures and the applicable scenarios for voice advertising become more abundant, voice advertising will attract more attention from advertisers. Detailed statistics results as illustrated in Picture. 2.4.
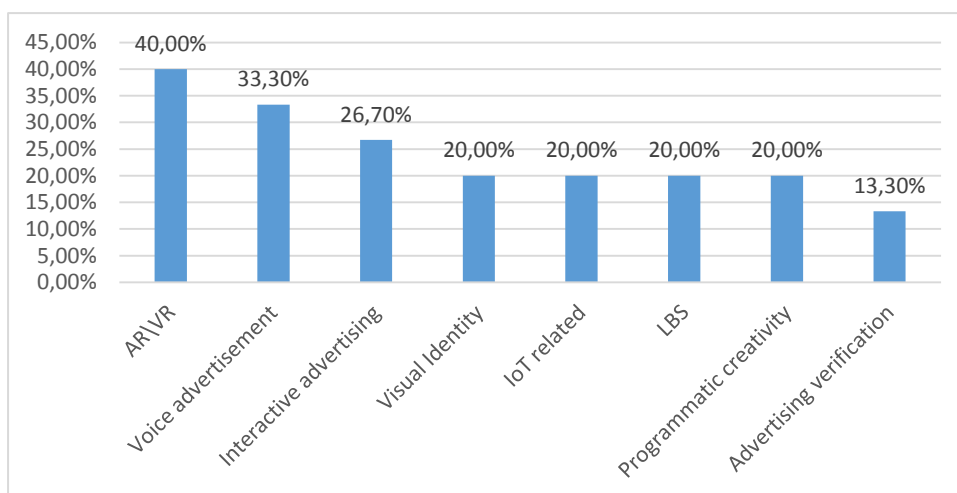
Picture. 2.4- Statistics chart of attempts of new AI + marketing technologies.

AI+ marketing application usage

In the specific link of AI+ marketing application, the main application link of AI+ marketing by advertisers is "creative generation", with a proportion of 60.0%, and the proportions of "user insight" and "effect analysis" are both 46.7%. At the same time, there are also some advertisements. The main application landing links that I have tried are "strategy formulation" and "remarketing". Detailed statistics results as illustrated in Picture. 2.5.
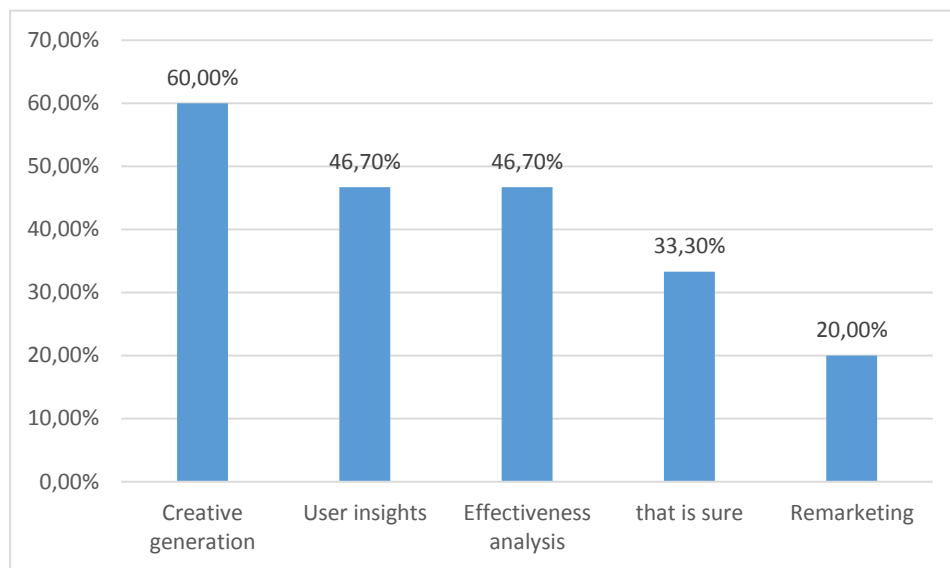
Picture. 2.5- Statistics chart of attempts of AI+ marketing application usage.

Reasons why advertisers choose AI advertising

More than 90% of advertisers have done AI advertising, and the remaining less than 10% of advertisers who have not done so yet, 64.3% of advertisers said that the user experience is good, 57.1% of advertisers believe that brand exposure is high, 42.9% Of advertisers believe that the brand has a high reputation and is cost-effective. At the same time, advertisers have affirmed the conversion effect of AI marketing. Detailed statistics results as illustrated in Fig. 2.6.
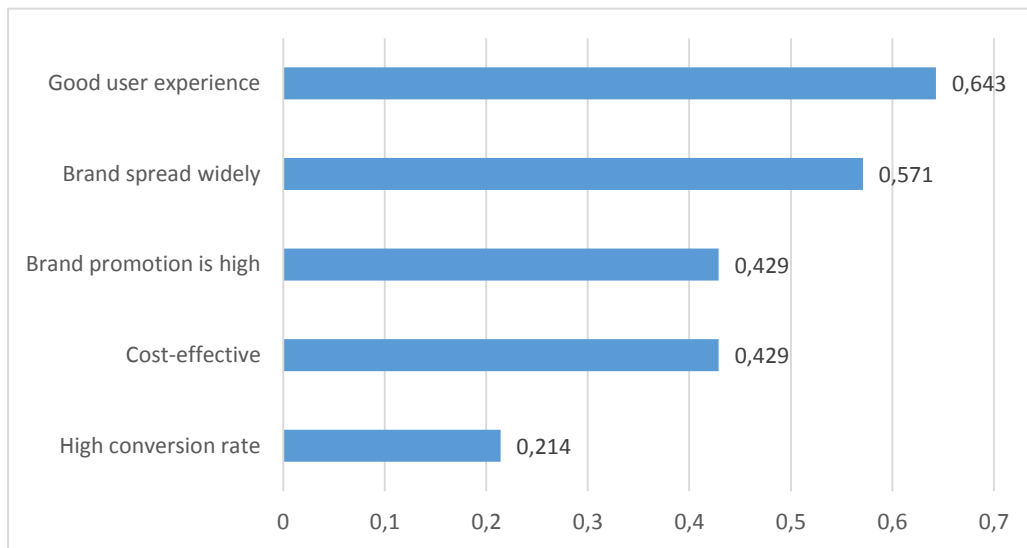
Picture. 2.6- Statistics chart of reasons for choosing AI advertising.

Advertisers pay attention to elements when placing AI advertising

When placing AI advertisements, the most important factors for advertisers are the "delivery time point" and "delivery effect", with the proportions being 35.7% and 28.6% respectively. At the same time, the exposure in the delivery evaluation index is an index that more than 70% of advertisers will choose. Detailed statistics results as illustrated in Picture. 2.7.
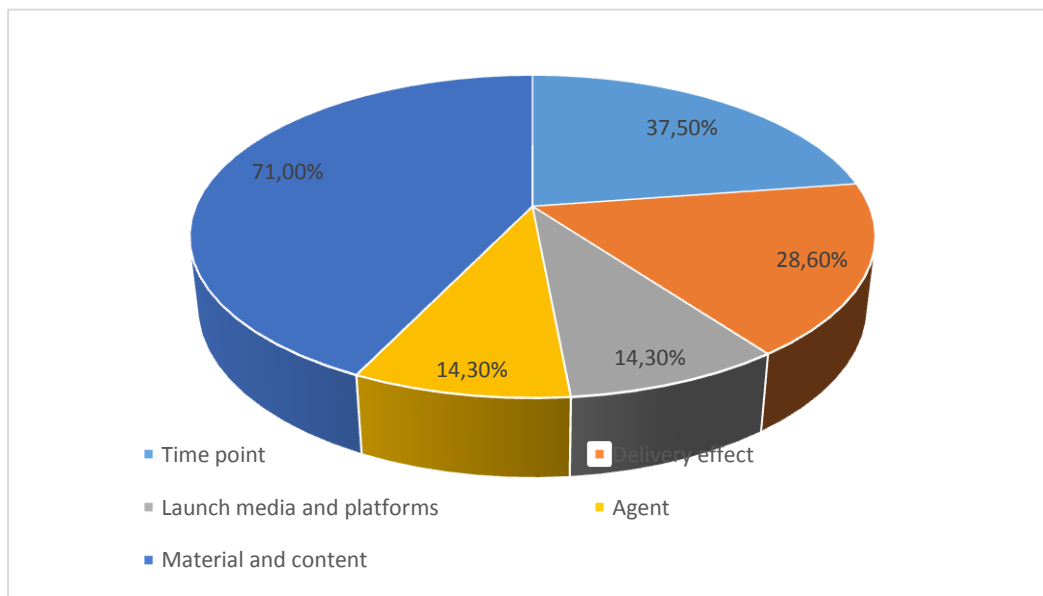
Picture. 2.7- Statistics chart of AI advertising focus factors.

Advertiser AI advertising strategy

Advertisers are rich in types in terms of delivery forms. Among them, "search ads" and "video patch ads" are the most selected, with the proportions being 42.9% respectively. Other forms include graphic advertisements and voice interactive advertisements, with the proportions being 35.7% and 28.6% respectively. Detailed statistics results as illustrated in Picture. 2.8.
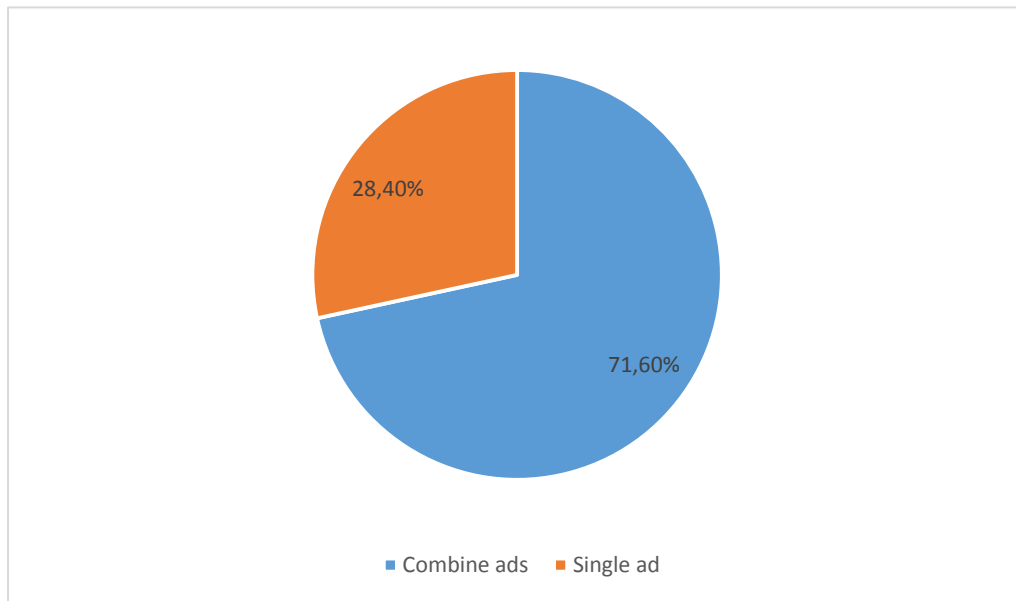
Picture. 2.8- Statistics chart of Advertiser AI advertising strategy.

AI advertising budget as a proportion of total network advertising budget distribution

AI advertising as a percentage of the overall online advertising budget is at an early stage. 50% of advertisers' AI advertising budget accounts for 10-20% of the online advertising budget. At the same time, 7.1% of advertisers' AI advertising accounts for 40- 50%. At the same time, advertisers are still in the trial stage of AI advertising. In terms of finishing, the magnitude of the budget is also relatively conservative. The proportion of advertisers with a budget of less than 1 million and a range of 1 million to

2 million are 35.7% and 28.6%, respectively. . Detailed statistics results as illustrated in Picture. 2.9.
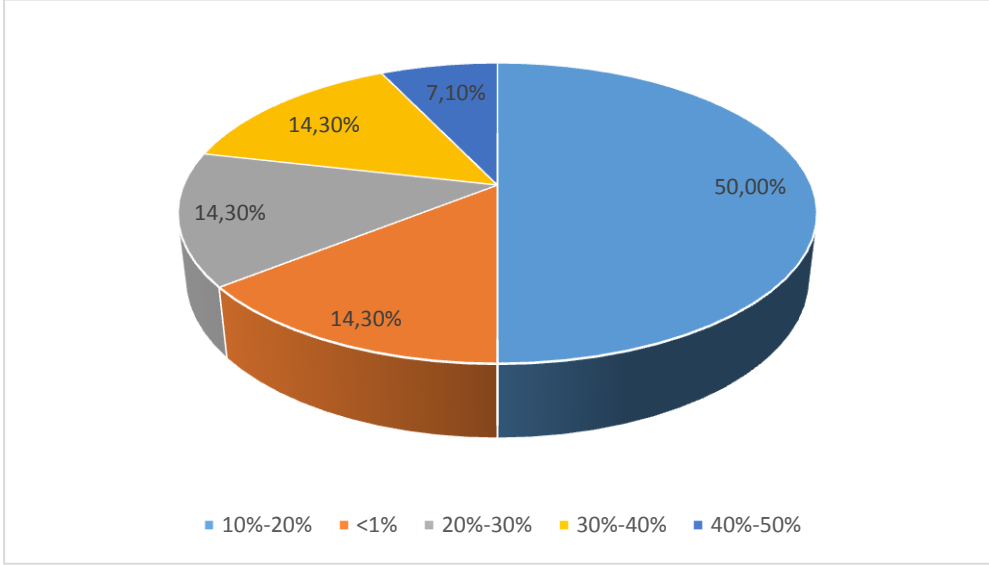
Picture 2.9 - Statistics chart of AI advertising budget percentage.

2.4.3 Case analysis

1). Case introduction: AI data empowerment marketing -Omni Marketing (Baidu Company)

With strong data capability and leading AI technology, Baidu has always been at the forefront of the industry in the field of intelligent marketing. Baidu launched Omni Marketing's fully conscious integrated marketing data platform based on the world's leading AI technology, big data capability and mature integrated marketing system. Omni Marketing is a one-stop visual operation platform integrating Baidu's full-link, full-data and all-media marketing. At the customized marketing node, through the "online + offline" full scene and "search + information flow" all-media intelligent delivery engine, intelligent creative communication is completed with thousands of people and AI video content. With the global data capture and intention recognition

engine, the target individual is accurately identified and reached, and the user asset precipitation is completed to achieve secondary marketing and continuous access. Finally, Through AI empowerment, enterprises can create a more effective marketing closed loop. By optimizing the whole marketing link, enterprises and brands can understand users better, provide or create products and services closer to users' demands, and correspondingly, bring more lucrative marketing investment returns for enterprises and brands. [33]

Omni Marketing is based on technology and data capabilities, and opens up online and offline data through AI ID to identify target users in all directions; Deeply understand and predict the demand intention, and help the brand to establish one-on-one efficient interaction with consumers; And through continuous multi-channel communication, promote the decision-making process of consumers, monitor the effect in real time and optimize the delivery. Provide brand customers and partners with more comprehensive, accurate and efficient marketing tools and solutions. Build brand advertising marketing ecology through multi-party cooperation.

Omni Marketing is the digital platform of Baidu's full-consciousness integrated marketing, which provides agents and brand owners with global solutions for Baidu brand marketing. Omni Marketing perfectly combines data with AI technology, builds Omni intention engine on the basis of integrated Baidu big data, depicts user portraits, identifies user intentions, and finally provides partners with comprehensive and accurate marketing capabilities.

Omni Marketing is an open and win-win platform. Besides the ability of integrated delivery, Omni Marketing is also willing to provide partners with the possibility of global marketing, which is not solidified or closed, so as to help partners fully promote

their conscious marketing, and build an open partner ecology to further empower the marketing of the whole market. In order to encourage more agent partners to achieve more cooperation and output with Baidu Omni Marketing, Baidu will open Omni Marketing's product use rights and exclusive customized services for Omni Marketing strategic partners, and provide marketing support directly to Omni Marketing's core product team for each project team of agents.
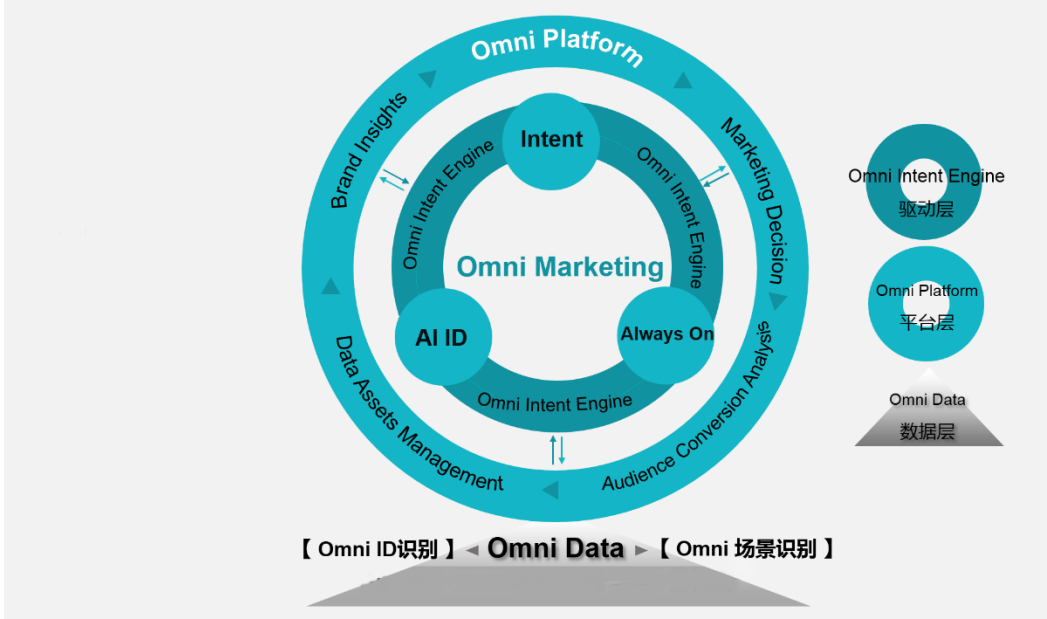
Picture 2.10 - Omni Marketing platform model diagram

2). Effect analysis:

"Huayang Lianzhong" teamed up with Baidu Omni Marketing Platform to create the first circle marketing case for Volvo in the whole industry, which realized social crowd insight and coverage, differentiated communication strategy and online and offline full scene coverage, and helped Volvo S90 2019 to complete the wonderful listing. Through Omni Marketing's post-investment data analysis ability, the people who searched for this product within 3 days before the mid-stage investment were compared with those

who searched for this product within 3 days after the investment. From the data, it can be found that the brand interaction rate of the people who were Reach has obviously improved, especially the brand interaction rate of the people in the family and fans circles has increased by more than 30%.

Dentsu An Jisi used Omni Marketing strategy to help Jaguar E-pace launch its marketing. With regard to this cooperation with Baidu's full-awareness marketing platform, Paul Hu, executive vice president of Jaguar Land Rover China Market, said in an interview earlier that Omni Marketing platform helped the brand to improve the contact accuracy and delivery efficiency and promote the establishment of the relationship between the brand and consumers in the process of understanding demand intentions, real-time data accumulation and repeated contact. During the short two-week launch period, the search demand of Jaguar Land Rover brand "test drive video" increased by 83%. [34]

Xu Hongwei, managing director of Qunyi Search, said that Omni Marketing has brought them a good empowerment tool. "In fact, we have taken the lead in cooperation in luxury goods, tourism and automobile industries. For Omni Marketing, we feel that its empowerment is very obvious for our partners and brand advertisers. Omni Marketing can not only create users, but also impress users in the process. I hope that Omni Marketing can continue to innovate. Now the data may be like an iceberg, only 10%. In the future, we will develop 90% of the iceberg project together, and the projects based on us and our customers can play a better role. "

Li Zhiwei, head of Omni Marketing digital platform and product director of Baidu Brand Advertising Department, said that Omni Marketing is a commercial product that came into being with the technological development and industry needs in AI era. Its

birth also accelerated the ecological transformation of data technology empowering agents, and it is also a good product to explain how Baidu technology empowers brand marketing. Omni Marketing is a very important part of Baidu AI empowerment marketing practice, which can well understand consumers' intentions and optimize marketing decisions and delivery.

2.5 Enterprise development artificial intelligence marketing analysis (based on 7S model)

2.5.1 Strategy

The author has introduced Changyu's marketing strategy in detail in 2.3.2. The enterprise's strategy is mainly based on the traditional marketing method (4P theory). Basically, the basic positioning of enterprise strategy is from four aspects: product, price, place and promotion. The main means is to launch marketing activities through traditional marketing methods and marketing techniques. Even though the enterprise is in this era of artificial intelligence, the important technology of artificial intelligence has not been applied in depth strategically.

Summary: There is no marketing intelligence transformation strategy, only small optimization measures exist. There is no strategic goal for artificial intelligence marketing.

2.5.2 Structure

Because I mainly study marketing, the author introduces the organizational structure of the marketing department of the enterprise here. The organizational structure of Changyu's marketing department is relatively traditional. The marketing manager

manages seven supervisors, which are product supervisor, advertising supervisor, market expansion supervisor, public relations supervisor, marketing planning supervisor, promotion supervisor and market research supervisor. Product supervisor mainly manages product specialist, advertising supervisor mainly manages advertising specialist, market widening supervisor mainly manages market widening specialist, public relations supervisor mainly manages public relations specialist, market planning supervisor mainly manages planning specialist, promotion supervisor mainly manages marketing specialist and market research supervisor mainly manages research specialist.

Summary: Compared with tradition, each department is relatively independent. There is no intelligent management department responsible for the implementation of artificial intelligence marketing technology.

2.5.3 Systems

Changyu is a share-concentrated company, and major decisions of the company are discussed and resolved by meetings. General directors and other senior managers have decisive advantages.

Summary: Meetings are frequent and inefficient. Top management has a decisive advantage. Thought is conservative.

2.5.4 Skills

Changyu has more than 2,780 salespeople, accounting for more than 60% of the enterprises. In recent years, although Changyu has raised the recruitment requirements, the employees are basically marketing majors and management majors

Summary: Lack of artificial intelligence professionals and computer programming

professionals.

2.5.5 Staff

Changyu Group (including shares) has 4040 employees, including 1453 financial personnel, accounting for% of the number of enterprises. There are 152 technicians, accounting for% of the number of enterprises. There are 1331 production personnel, accounting for 40% of the number of enterprises. There are 2780 salespeople, accounting for 68% of the total number of enterprises. There are 219 administrative personnel, accounting for 5% of the total number of enterprises. The rest are product developers.

Summary: The number is huge and the classification is clear, but there is a lack of artificial intelligence technicians. [35]

2.5.6 Style

It is very good that the management mode of enterprises is strict and there is a complete company system. Being able to reasonably distribute the company's capital surplus, insisting on the main business as the core, the company can use the generated free cash to pay dividends in time, instead of blindly investing or diversified development. The accumulated dividends in 11 years are 1.75 billion, which is roughly similar to the free cash generated in previous years, reflecting the rationality of management.

2.5.7 Shared Values

Changyu has a strong corporate culture, which is "down-to-earth, persistent and

energetic". Moreover, enterprises often hold large-scale evening parties to promote the progress of corporate culture.

Summary: There is no idea to guide the intelligent development of enterprises, and there is no value to cultivate the transformation of artificial intelligence of enterprises.

Chapter summary: This chapter is the second chapter of the thesis, which mainly discusses the comprehensive situation of target enterprises and artificial intelligence marketing. This chapter is divided into two parts. In the first part, the 4P marketing strategy of the target enterprise Changyu is introduced in detail, and the problems displayed by enterprise marketing are analyzed in detail through PAR theory: 1. The marketing platform is not perfect. 2. The marketing mode is single and lacks organic combination. 3. Information collection and feedback lag behind, and decision-making is slow. 4. The action lacks data support and the implementation process is cumbersome. 5. The correlation between data is weak, and the marketing link is blocked. The second part introduces the development of artificial intelligence in China in detail. Finally, through 7S model, the information of seven elements of the enterprise is briefly analyzed from the angle of artificial intelligence marketing.

3 DISPLAY AND PROSPECT OF RESEARCH RESULTS

3.1 Feasibility analysis of enterprise artificial intelligence marketing (based on PEST analysis)

3.1.1 Political environment analysis

The Chinese government strongly advocates the development of artificial intelligence technology. China's major state organs have continuously introduced relevant policies to speed up the development of artificial intelligence and accelerate the landing of artificial intelligence in key areas. Among them, the Development Plan of New Generation Artificial Intelligence issued by the State Council in 2017 and the government work reports for 17 and 18 years clearly defined the development of intelligent industries and accelerated the in-depth application of artificial intelligence. Moreover, the government of Zhejiang Province held an executive meeting to review policies such as the Development Plan of New Generation Artificial Intelligence in Zhejiang Province. The government pointed out that artificial intelligence is the commanding height of future basic research fields and key technology application industries, and is an important force of the new economic revolution. It is necessary to give full play to the first-Mover advantage of information economy in Zhejiang Province, seize the time window, and promote the development of artificial intelligence with extraordinary efforts. Strengthen study and research, focus on the development stages of artificial intelligence such as "operational intelligence, perceptual intelligence and cognitive intelligence", organize and implement a number of major scientific research projects around key areas such as cutting-edge theory, core technology, supporting platform, innovative application and industrial development, and rely on

high-end science and technology innovation platforms such as Zhijiang Laboratory. Set up a platform for co-construction and sharing, attract top international experts, leading scientific and technological talents and high-level innovation teams to actively participate, and provide talent support for the development of artificial intelligence. Integrate into the "standardization "construction, lead the high quality with high standards, and strive to build an artificial intelligence innovation highland with global influence.

3.1.2 Economic environment analysis

In recent decades, China's economy has developed rapidly, which is obvious to all around the world. According to statistics, China's economic scale is constantly expanding, its comprehensive national strength is increasing day by day, and its contribution rate to world economic growth is further enhanced. In 2018, China's revised GDP was 91,928.1 billion yuan, an increase of 1,897.2 billion yuan or 2.1% over the preliminary calculation; It is about US$ 13.9 trillion, accounting for 16.2% of the world economy and contributing about 30% to world economic growth. China continues to be an important engine for promoting world economic growth. With the expansion of economic aggregate, China's economic increment is considerable, which is equivalent to the economic aggregate of a medium-sized developed country in one year. This huge economic aggregate effectively guarantees the development of artificial intelligence marketing.

Not only at the national level, but also the economic influence of enterprises themselves is enormous. After more than one hundred years of development, Changyu has developed into the largest wine production and operation enterprise in China and

even in Asia. In 1997 and 2000, Changyu B shares and A shares were successfully issued and listed. In July 2002, Changyu was rated as "one of the 16 national brands with the most international competitiveness to enter the world-famous brand" by China Federation of Industrial Economics. In the 2004 annual enterprise competitiveness monitoring jointly conducted by the Chinese Academy of Social Sciences and other authoritative institutions, Changyu's comprehensive competitiveness index ranks eighth in the food and wine industry of Chinese listed companies, and it has become the only wine enterprise to enter the top ten. The most important thing is that Changyu's business income will reach RMB 4 billion in 2020.

3.1.3 Social environment analysis

China is a digital power with a strong atmosphere of digital intelligence reform. Moreover, in the next five years, Zhejiang will use digital reform to incite reforms in all fields and aspects, and use digital technology, digital thinking and digital cognition to systematically reshape the institutional mechanisms, organizational structure, methods and tools of provincial governance in an all-round way. Promote process reengineering, digital empowerment, efficient collaboration and overall intellectual governance in various localities and departments, promote quality change, efficiency change and power change as a whole, and promote the modernization of provincial governance systems and governance capabilities at a high level, striving for digitalization and intelligent provinces.

Moreover, according to the data of China's seventh census, among the permanent population in the province, there are 10,970,312 people with college education or above; The population with high school (including secondary school) education level is

9397637; The population with junior high school education is 21,117,295; The population with primary school education level is 17,035,699 (the above-mentioned population with various education levels includes graduates and students of various schools). This indicates that the educational level of the permanent population in Zhejiang has been greatly improved, which is of great significance to the development of artificial intelligence in terms of talents.

3.1.4 Technological environment analysis

According to statistics, the total number of artificial intelligence talents in China ranks second in the world. As of 2017, China has 18,232 artificial intelligence talents, accounting for 8.9% of the world total, second only to the United States (13.9%). Universities and scientific research institutions are the main carriers of artificial intelligence marketing talents, and Tsinghua University and Chinese Academy of Sciences have become the institutions with the largest input of artificial intelligence talents in the world. There is a large reserve of professional and technical personnel. Moreover, China is a world leader in the application of big data, especially in the fields of consumption and service. China's mobile payment scale exceeds RMB 150 trillion, ranking first in the world. [36]

China's first demonstration province and "National Information Economy Demonstration Zone" with deep integration of the two industries have formed a development pattern led by digital industries such as cloud computing, big data and Internet of Things, and some areas are leading, laying a good technical foundation for the development of artificial intelligence.

At present, China has made outstanding achievements in artificial intelligence

marketing technology. Companies like Alibaba, Baidu, 360 and so on already have mature technologies. And a large number of enterprises are accelerating the artificial intelligence of marketing. There is rich technical experience.

Moreover, there are many typical companies in the world that can provide case study, such as SAP, which transforms the database into useful Intel artificial intelligence. HANA is SAP's cloud platform, which is used by companies to manage the information databases they collect. In short, it replicates and absorbs structured data, such as sales transactions or customer information, from relational databases, applications and other sources.

The platform can be run through a company server or through a cloud installation. HANA collects information from access points throughout the enterprise, including mobile and desktop computers, financial transactions, sensors and equipment in production plants. If your salespeople use the company's smartphones or tablets to record purchase orders on the spot, HANA can analyze and understand the data of these transactions to find trends and irregularities.

For example, Wal-Mart has been using HANA to process a large number of transaction records in a few seconds (the company operates more than 11,000 stores).

3.2 Suggestions on Marketing Innovation

3.2.1 Marketing optimization of enterprises based on PAR theory

1). Pattern and Platform

A. build an integrated intelligent marketing platform

The distribution and dissemination of traditional grape wine mainly focus on shopping malls and self-built stores, while the development of the Internet has changed

people's purchasing concepts and ways, and network channels have begun to replace traditional channels as the main sales force. Enterprises also turn their attention to online and build their own digital marketing platforms. The main methods include establishing their own franchise stores on the scale and traffic advantages of third-party platforms; Build the portal website of publishing enterprises independently and develop APP products in a cooperative or independent way with the help of mobile terminals. Just like Zhang Yu did, he built an online shopping mall. A purchasing platform has been established on the official website of the enterprise. However, these platforms are closed to each other, and there is no integrated distribution management platform for overall planning, which leads to scattered resources, difficult data sharing and increased user time cost. When artificial intelligence participates in the construction and operation of the platform, it should not only bring the features of functional integration, convenient operation and strong interactivity into full play, but also use big data to reflect the intelligent management, that is, the marketing platform will be brought into the overall planning of the system.

"The integration of Internet of Things and various information technologies will bring about qualitative changes in network applications. Intelligent assistants based on big data and artificial intelligence technology will completely subvert the connotation of digital communication platform and upgrade to intelligent assistants with super computing power, learning ability and communication with people". Enterprises need to change the platform building ideas, base themselves on mobile terminals, build and embed an operating system platform with the support of technology vendors, and manage the publishing information in the terminals as a whole. Using data mining, cloud computing, voice interaction and other technologies, the system will

automatically retrieve and integrate the publishing resources in the mobile terminal platform like a personal assistant, and provide personalized services for customers according to the instructions. Therefore, the author draws lessons from the experience of other enterprises and designs a new intelligent marketing platform. As shown in Figure 3.1. There are three process steps in this platform. First, a unified portal should be established, which includes the enterprise portal, channel portal and client portal of grape wine. Second, it is necessary to process the information entering from the entrance. Search the required information resources and find the resource pool (because it is a specific analysis of Changyu, this resource pool is the inventory of all platforms of Changyu). The resource pool includes all the inventory under the enterprise line, the inventory of each distribution and the inventory of online shopping malls (including Taobao and JD.COM). Then it needs to be recommended by algorithm. The algorithm has two levels, one is the data layer, which contains the basic information of customers, the retrieval history of customers, the collection history of customers, the purchase history of customers and other necessary information. The other is technology layer, which includes data mining technology, data analysis technology and information filtering technology. The third is the output of personalized demand for customers.

The construction of this new intelligent marketing platform of grape wine enterprise is based on unified standards, unified processes and unified norms. Therefore, cross-departmental and cross-organizational service management can be realized, so as to integrate product resources and improve service response speed and user experience. [37] For example, considering the poor reading and writing ability of the elderly, the platform function should especially strengthen the use of voice and image recognition functions to help them search more easily and quickly. In the past, apps were closed to

each other, and they could only communicate through hyperlinks. Customers often had to go through multiple jumps when purchasing products. The marketing resources in intelligent system are aggregated, and the publishing and marketing platform can automatically search and provide solutions in the whole network according to the customer's conversation content, and present the products in a panoramic way according to the needs, and finally provide the optimal shopping mix. The marketing platforms of enterprises are no longer isolated from each other. While optimizing their own functions, all product data are also included in the intelligent management system, which truly meets the demands of customers for automation and integration

There are many applications in the market, and users' choices are constantly dispersed. grape wine enterprises need to work together to form a community of interests, reach a consensus on data sharing and financing, and solve the problem of different enterprise standards. Only under the overall planning of intelligent system, unifying scattered channel interfaces, providing one-stop service by using resource integration platform, and reducing the choice cost of users, can enterprises better cultivate consumer loyalty.

B. Reshaping the marketing model driven by intelligent technology

Marketing model is a system, from marketing philosophy to marketing goal, which includes the combination of various methods and tools. In order to upgrade the marketing mode, enterprises need to change their ideas and focus on providing quality services. The goal of marketing is to attract customers. Therefore, product marketing in the intelligent era should focus on consumers, focus on knowledge service and experience optimization, and change to a "service-oriented" model.

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                    ┌─────────────────────────┐
                    │      Unified entrance     │
                    │ ┌───────────────────────┐ │
                    │ │ Enterprise Channel Customers │ │
                    │ └───────────────────────┘ │
                    └─────────────────────────┘
                    ┌─────────────────────────┐
                    │     Resource retrieval    │
                    └─────────────────────────┘
         ┌──────────────────────────────────────────────┐
         │ Speech Recognition Text Recognition Image Recognition │
         │              resource library                  │
         │ Enterprise inventory, online inventory, offline inventory │
         │          Algorithm recommendation              │
         │ ┌──────────────┐      ┌──────────────┐        │
         │ │  Data layer   │      │ technology layer │     │
         │ │ Basic information │   │ Information       │    │
         │ │ purchase history...│  │ processing        │    │
         │ │              │      │ technology        │    │
         │ └──────────────┘      └──────────────┘        │
         └──────────────────────────────────────────────┘
                    ┌─────────────────────────┐
                    │      Product output       │
                    └─────────────────────────┘
```
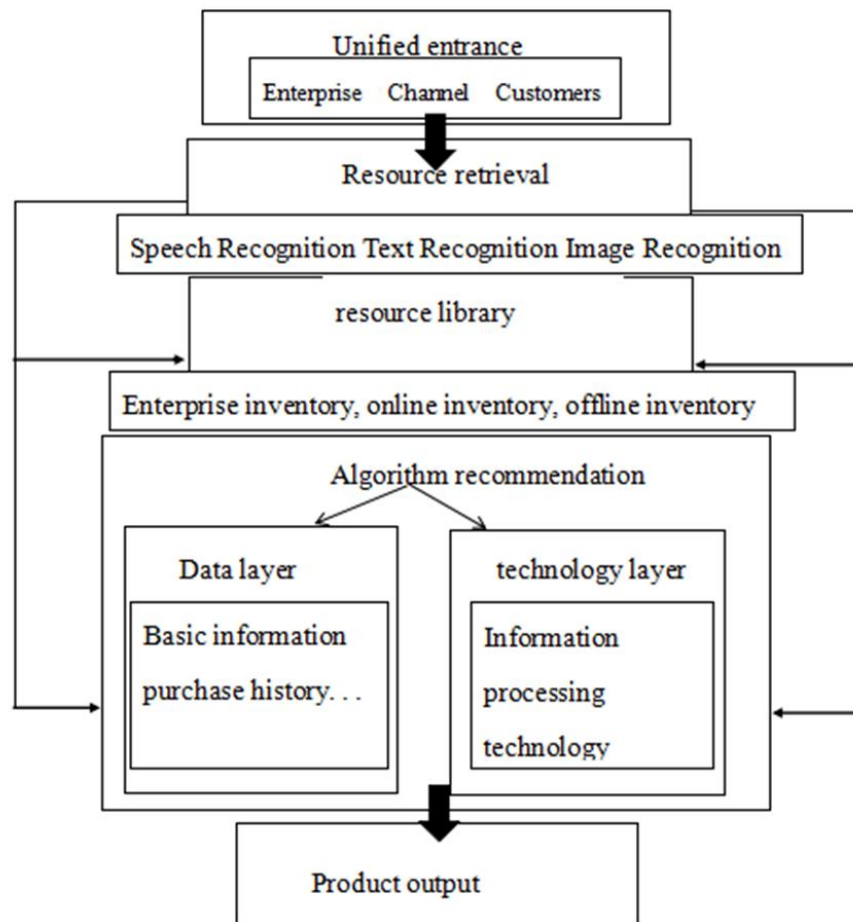
Picture 3.1 – Marketing platform design drawing

Perceive customers' demands, provide targeted strategies, and bring customers a pleasant user experience with fast, simple and effective services, which can not only increase user stickiness, but also create lasting value for enterprises. [38]

At present, the grape wine market in China is developing day by day, and the technology of artificial intelligence is constantly improving. Therefore, it is necessary to upgrade the single marketing mode intelligently. The connotation of intelligent upgrading of marketing mode also includes the internal collaborative management of enterprises and the overall planning of external specific activities.

In the aspect of internal strategic management, grape wine enterprises should build their own intelligent customer relationship management system, and make statistics,

analysis and storage on the age, occupation, educational background, interests and spending power of customers, and build a marketing database. Guide the accurate push and marketing of subsequent products. The "one-to-many" popular marketing model is no longer suitable for the current market situation, and the "individuation" of grape wine enterprise marketing has become an irresistible historical trend. The marketing strategy management of enterprises is to prepare for market execution, and the personalized marketing mode under "one-to-one" needs to describe users' portraits more accurately. "Looking at traditional publishing from the perspective of big data, the biggest problem is that books have achieved sales, but they cannot achieve accurate portraits of readers" [39], not only customer relationship management, but also the marketing system in the intelligent era should be connected with the procurement, production, finance, human resources and other systems of enterprises, making decisions by comprehensively using the overall data of enterprises, and promoting the improvement of marketing performance according to company resources. [40] In terms of specific marketing activities, enterprises should shift publications from single-function promotion to multi-function integration promotion. Driven by intelligent technology, enterprise marketing is no longer a unilateral push. Voice interaction technology can be used to solve readers' problems in real time, realize the automation of purchase process, avoid feedback delay and improve service satisfaction.

2). Agility and Action

A. Constructing Knowledge Graph to Speed up Marketing Decision-making

Knowledge Graph is an important branch technology of artificial intelligence, and it is one of the core driving forces to promote the development of Internet and artificial intelligence. At present, typical applications include semantic search, intelligent

question answering, visual decision making and so on. It is structured data that can be used on the basis of rapid collection and integration of information by big data related technologies.

Enterprises first need to use machines to conduct research to form the data base of knowledge map. Information stored by computers and sensors and information stored in non-digital form that existed in the past are digitized, which together constitute the content of big data. It is obviously difficult to collect these data by traditional data collection methods of grape wine enterprises. Compared with human investigation, artificial intelligence technology can quickly and comprehensively retrieve and collect data, and the comprehensiveness and accuracy of data are greatly enhanced. In addition, the market demand is always changing, and the machine can update the data in various dimensions in real time according to the changes of customers' reading situation and purchase situation in different periods, so as to ensure the timeliness of the data.

For example, technologies such as mobile intelligent interactive terminal, VR display, and self-media information collection are comprehensively used to update customers' purchase scale, access frequency, and attention popularity in real time, so as to realize synchronous perception of user needs, fully interconnect online information publishing and offline reading activities, and form a user demand perception system with wide coverage and diverse forms.

Secondly, enterprises can use data mining technology to build knowledge maps and embed algorithm systems to help them make quick decisions. Artificial intelligence helps enterprises to filter and sort out massive data efficiently, label customer information, and transform data from unstructured to structured, thus forming a customer database. Through data modeling, a user knowledge map including customer's

product browsing behavior, purchase ability, purchase intention, purchase frequency, consumption habit, consumption scene, choice preference and consumption structure is established. Based on the measurable and available map data, the machine algorithm system automatically generates the marketing strategy design in combination with the marketing strategy objectives, which improves the decision-making speed.

The consumer information of grape wine is particularly complex, and it is necessary to borrow knowledge map technology. Here is a typical example. Inkitt, a data-driven publisher, collects and sorts out data through algorithm analysis technology, and uses machine learning technology to structure real-time information of customers, create decision templates, and then draw up marketing plans, which has achieved good results. It is worth noting that enterprises should do a good job in static attribute analysis, dynamic attribute analysis, user consumption attribute, user psychological analysis, etc. Static attribute analysis refers to the basic information left by the user when browsing the page, so as to obtain the personal information of the user, such as real name, gender, user name, date of birth, mobile phone number, occupation and so on. Dynamic attribute analysis refers to the data information left by users in the process of using the network platform, such as users' knowledge level, learning style, collection history, retrieval records, reading comments, etc. User psychological analysis refers to the work related to users, and user consumption attribute analysis refers to users' consumption psychology, consumption preferences, consumption habits and other information.

In order to better demonstrate this solution, the author constructed a relatively complete map of marketing information knowledge of grape wine, and the specific structure is shown in Picture 3.2.
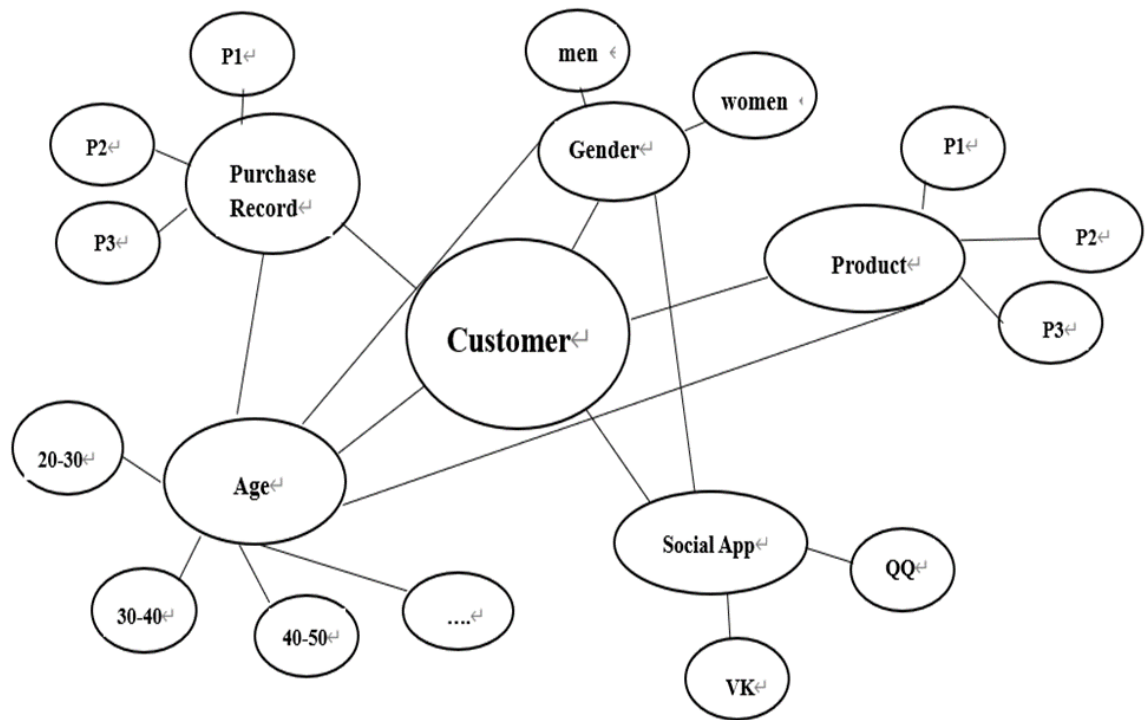
Picture 3.2 – Concept map of Knowledge Graph

B. Insist on using data to guide the implementation of marketing actions

Artificial intelligence has brought changes to the marketing actions of grape wine. Enterprises can obtain data support in action from the following aspects. First, strengthen interaction with consumers before action. Under the Internet, enterprise customers have equal status, and the operation mode of ignoring market information feedback is no longer applicable to enterprises. Multiple interactions between enterprises and consumers can help to understand their real needs, change the inefficient marketing situation based on experience, enhance the stickiness of both parties and cultivate the loyalty of consumers to brands. Grape wine's consumers are diversified, so it is easy to deviate from the established target without distinction, and it is difficult to produce results. Communication between artificial intelligence and consumers is fast and efficient, and real-time feedback makes marketing actions not lag behind the

evolution of market demand.

Secondly, establish the idea of data leading in action. The emergence of big data redefines marketing and changes traditional experiential marketing. Customer demand data for products is massive, scattered and multidimensional. Different customers have different preferences, and different age groups have different purchasing needs. Data mining and semantic analysis technology can widely collect information from the Internet and the Internet of Things, form a big data marketing database of enterprises, build a knowledge map, and then use the powerful computing power of machines to quickly and accurately analyze, form a sales chain for customers' real needs, and improve business results.

Finally, strengthen the feedback and monitoring after the action. When implementing the marketing plan, both known threats and potential risks may weaken the effect of decision-making. At this time, if the intelligent monitoring system is embedded into the marketing process, and the technologies such as automatic detection of abnormal data and natural language processing, image recognition and intelligent analysis of intelligent machines are used for defect detection, the parameter performance of various aspects of marketing work can be effectively measured and optimized, including accurate positioning of customer objects, fine interpretation of reading needs, flexible processing of products, etc. On the other hand, artificial intelligence can realize the automation of operation. When grape wine enterprises implement specific marketing activities according to marketing decisions, some tasks can be completed by machines, saving labor costs.

For example, in the production and delivery of advertisements, enterprises need to edit and make pictures and texts on social media in the traditional way, and publicize

them. At this time, enterprises can introduce intelligent advertisement delivery system, and push advertisements with highly relevant commercial information according to consumers' personalized characteristics and needs by means of programmatic advertisement trading platform. The advantage of intelligent advertisement delivery system is that, on the one hand, it breaks through the dilemma of one thousand people in traditional advertisements and realizes one-to-one accurate push. On the other hand, the intelligent advertisement delivery system adopts the form of programmatic buying, which realizes the whole automatic operation from the formulation of grape wine advertisement strategy, creative generation to advertisement delivery, and greatly improves the efficiency of marketing communication.

3). Relevance and Response

Strengthen relevance connection and realize comprehensive marketing

Big data has great use value, and some scholars even call it "new oil in the future". Grape wine enterprises should introduce artificial intelligence technology based on data analysis to realize data sharing in the whole marketing process, strengthen the correlation of information in all dimensions in big data, and greatly enhance the linkage among all links. Enterprises are not only concerned about how to develop and spread new products, but can manage the business value of existing and potential customers in the whole life cycle from the perspective of the whole business model innovation, from the beginning of customer interest, retrieval, browsing and purchase, to after-sales comments, sharing and feedback, to the subsequent planning, development and push of related theme products, using all kinds of resources from all media and channels, and realizing that the marketing mix is highly related to the interests of customers in all directions. From the promotion of products to the specific sales, all the data circulating

in the middle can be measured under the intelligent technology, which means that every link of enterprises in modern marketing is no longer blocked, but can intelligently combine data to help marketing decisions. For example, Japan Maruyama Holdings Co., Ltd. and Printing Co., Ltd. jointly introduced AI technology to establish a book distribution system, which improved the sales efficiency and enhanced the ability to cope with market risks by linking the data among customers, circulation and inventory. [37]

In addition, with the support of artificial intelligence, Internet of Things and other technologies, almost all information can be obtained, saved, interconnected and shared. Enterprises can also establish the correlation between internal and external data through the map modeling and analysis of data, so as to realize real comprehensive marketing. In the past, enterprises paid more attention to equipment, performance, internal personnel and so on, but in essence, grape wine marketing was closely related to external social network, macro laws and regulations, news commentary, competitor information and other factors.

Under the background of artificial intelligence, these external related factors become measurable. If the internal perspective of an enterprise can introduce the external perspective and enrich its own database, it will increase the scientific nature of decision-making and the accuracy of problem solving. For example, in the handling of competitive relations, if we analyze the market in an all-round way, we will find that the participation of intelligent technology in marketing is still in the development stage, and the application of technology is immature. Enterprises need to build a new type of "competition and cooperation" relationship with their opponents, and only cooperation can quickly cultivate and expand the scale of enterprises; In a larger market, enterprises

can achieve more lucrative returns through competition. The direction of this cooperation must be to try to cooperate to improve the fit between marketing mix and customers' demands. For example, the new grape wine, which meets customers' demands for future value, should not only pay more attention to taste, but also fully integrate with customers' local life and social habits.

3.2.2 Suggestions based on 7S model

1). Strategy

Strategy is the direction of an enterprise, and the ability of an enterprise to formulate a good strategy plays a decisive role in its future development. Therefore, facing the development of artificial intelligence technology, enterprises need to formulate a perfect strategy. Strategically, enterprises should determine the development status of artificial intelligence marketing and start the transformation of marketing strategy.

For example, an enterprise can set a goal to improve its artificial intelligence construction in the next five years, and hand over 90% of its data processing and analysis to machines.

At this point, enterprises can conduct technical exchanges with some enterprises that are in the forefront of artificial intelligence marketing.

2). Structure and Systems

With strategic generosity, enterprises should adjust their existing organizational structure and set up special institutions to build their artificial intelligence marketing platform. This is not only in marketing, but also in enterprises, through artificial intelligence systems, to strengthen the links between various departments and form an intelligent system.

3). Staff and skills

Enterprise development is the fundamental task of enterprises. In the current environment where talents support the development of enterprises, employees have become the core resources of enterprises. For the development of enterprises, its essence is human problems, so many enterprises attach great importance to enterprise training at present. At the same time, for the related work of enterprise management, its core content is also aimed at the management of people.

On the one hand, enterprises should speed up the training of existing employees' technical ability, so that employees can master basic intelligent operation. For this, enterprises can cooperate with universities to train their employees about intelligent technology on a regular basis.

On the other hand, enterprises should recruit some technical staff who master computer programming and some specialized talents.

4). Style and Shared Values

Enterprises can cultivate the cultural atmosphere of intelligent learning within the company, and guide the intelligent development of enterprises from the concept. In order to achieve this goal, some activities can be held in the company. For example, artificial intelligence knowledge contest, programming work ban, etc.

3.2.3 Suggestions for other industries

The author thinks that enterprises in other industries also need to reform the traditional marketing methods. Enterprises are required to deeply analyze the weaknesses of their own enterprises. Carry out artificial intelligence reform on traditional marketing. We should fully understand the content and significance of

artificial intelligence marketing. The specific reform method can refer to the author's suggestion to Zhang Yu:

A. Reshape the marketing mode driven by intelligent technology.

B. Build an integrated intelligent marketing platform.

C. Constructing knowledge map to speed up marketing decision.

D. Insist on using data to guide the implementation of marketing actions.

E. Strengthen relevance connection and realize comprehensive marketing.

3.3 Economic indicators

The suggestions put forward by the author need to have certain practical economic benefits. The author believes that the development of artificial intelligence marketing can bring many benefits. As the representative of human science and technology, artificial intelligence can greatly improve the economic benefits of enterprise marketing, thus improving the social labor productivity of the industry and promoting the rapid growth of macro-economy.

In recent years, a new round of scientific and technological revolution, represented by cloud computing, big data and artificial intelligence, has made the existing information technology iterate rapidly and implement commercial application on a large scale gradually, which has changed the existing economic model. As the core force of intelligent technology development, artificial intelligence is expected to bring new opportunities and changes to the development of digital economy, and become a huge driving force for economic growth in China and even the world. Artificial intelligence will not only improve social productivity, but also provide new models and opportunities for economic and trade, and promote rapid economic growth. At present,

global productivity is in a state of low growth, because it takes some time for any economy to learn, absorb and effectively use new technologies, especially complex technologies that will have an important impact on the whole economy

Through a large number of literature studies, the author finds that artificial intelligence may increase the economic growth rate of all industries by 1.7% and increase productivity by 40% or higher. In 2018, artificial intelligence can even create marketing content, of which 20% is expected to be written by machines.

The author will analyze the economic benefit index of Changyu according to the suggestions put forward. The analysis mainly includes the following aspects:

1). The turnover will increase by 25%. According to the survey of "Summary of Annual Report of Yantai Changyu Brewing Co., Ltd. in 2020", it can be concluded that the operating income of Changyu in 2020 is RMB 3,395,402,001. The author assumes that the artificial intelligence marketing scheme has been implemented in 2021. Then, it is estimated that the turnover of the enterprise will reach RMB 4,244,252,501,25 in 2021 after optimizing the marketing mode through artificial intelligence.

Table 3.1 – Forecast Turnover Growth of Enterprises in 2021

	2020 (RMB)	Growth amount	2021 (RMB)
Turnover	3,395,402,001	+25%	4,244,252,501.25

2). The sales of products will increase by 20%. Because the artificial intelligence algorithm is used to accurately analyze the customer's needs, the matching degree of marketing promotion is more suitable, and the customer purchase amount is increased. According to the survey of "Summary of Annual Report of Yantai Changyu Brewing

Co., Ltd. in 2020", it can be concluded that the operating income of Changyu in 2020 is RMB 3,395,402,001. The specific changes are shown in Table 3.2 in detail.

Table 3.2 – Forecast sales growth of enterprises in 2021

	2020 (ton)	Growth amount	2021 (ton)
Sales	93,501	+15%	107,526.15
Production	93,990	+10%	10338,900
Inventory	24,925	-6%	23,928

3). Analysis of labor productivity. Table 3.3 is obtained through investigation and prediction. Output value and personnel structure of enterprises after artificial intelligence reform.

Table 3. 3 – The output value and personnel structure of enterprises before and after the reform

	2020	2021	Growth amount
Gross output value (RMB)	3,395,402,001	4,244,252,501.25	+25%
Number of employees in the enterprise (Person)	720	630	-12.5%
Average salary of employees (RMB)	7,500	7,500	/
Artificial Intelligence expense (RMB)	0	300,000	/

Analysis:

In 2020, labor productivity = total output value/number of employees = 3,395,402,001/720 = 4,715,836.11

2021 Labor productivity = total output value/number of employees =

4,244,252,501.25/630 = 6,736,908.73

2020 Total wages of employees = average wages of employees * number of employees *12=7,500*720*12=64,800,000

2021 Total wages of employees = average wages of employees * number of employees *12=7,500*630*12=56,700,000

Table 3. 4 – The change of enterprise's benefit before and after reform

	2020	2021	Growth amount
Labor productivity	4,715,836.11	6,736,908.73	42.86%
Total wages of employees (RMB)	64,800,000	56,700,000	-12.50%
Employee consumption (RMB)	64,800,000	57,000,000	-12.04%

3.4 Evaluation of artificial intelligence marketing

3.4.1 Limitations of Artificial Intelligence

The traditional talent system has been impacted

Artificial intelligence has participated in the whole marketing process. In the data collection and analysis, which need to invest a lot of manpower, artificial intelligence system can be used to replace the parts with strong repeatability and weak creativity, which means that the internal personnel structure of traditional enterprises such as grape wine will change in the future, and some posts will be replaced by machines, so repetitive manpower work will face unemployment risks and the traditional talent system will be impacted.

In the marketing stage, the marketing decision-making and execution can be completed automatically by introducing intelligent system, which can not only generate ideas, but also realize the automatic delivery of advertisements under the insight of consumers, and the original market investigation and evaluation function of the marketing department will be replaced. Enterprises will no longer need manpower survey, but need managers and operators of intelligent systems.

3.4.2 Suggestions for limitations

Reshape the talent system and strengthen the popularization of artificial intelligence knowledge

Artificial intelligence marketing artificial intelligence is not omnipotent, it doesn't have feelings like human beings. In some subtle jobs, artificial intelligence marketing still needs "human-machine collaboration". Therefore, on the one hand, enterprises should adjust the talent reserve structure and talent demand system, change from the traditional mode to data development talents, and increase jobs related to computers and artificial intelligence. In the marketing system of future enterprises, artificial intelligence will be introduced to market a large number of intelligent systems, such as customer relationship management system, creative decision-making system, advertising intelligent delivery system and so on. The efficient operation of these systems can not be separated from staff operation management, and the updating of functional departments on this basis also speeds up the overall operation of enterprises. On the other hand, we should strengthen the training of digital and artificial intelligence marketing intelligent publishing technology to help enterprises transform. Enterprises should undertake the responsibility and mission of re-educating employees, so that they

can adapt to intelligent production and marketing methods as soon as possible. Employees of enterprises should also strengthen their own knowledge reserves, actively understand and learn the relevant knowledge of artificial intelligence, understand the psychology of customers, and dig deep into their reading preferences and characteristics, so as to improve their professional quality and improve their innovation and creativity.

3.4.3 Outlook

The author believes that with the emergence of open-source technology platform in the future, the traditional marketing mode of enterprises will undergo tremendous changes. The marketing of enterprises will accelerate the pace of cross-border integration. Enterprises should not only transform to technology development, but also seize the opportunity and alliance with technology companies to realize intelligent marketing and seize the emerging market. [41] However, the application of artificial intelligence technology in marketing field is still at the trial stage, and there are still many problems to be solved urgently. For example, how can artificial intelligence technology be combined with 5G communication, Internet of Things and other technologies for deeper innovation? Technology clustering and integration is the key to the success of intelligent transformation of enterprises. However, the implementation of technology cannot be achieved overnight, and needs the cooperation of process optimization and mode innovation. Therefore, enterprises must combine the actual changes in the market, integrate and innovate with various technology clusters, take PAR model as a reference, and embrace an open mind to comprehensively innovate from multiple dimensions, so as to finally meet the complex and fast-changing needs of

readers and realize their own transformation and upgrading. [42] On the other hand, the problems that may arise in the application of artificial intelligence also need to arouse our vigilance. For example, the humanistic care of enterprises is diluted by form, and intelligent technology brings new operational problems. Only by establishing scientific and technological innovation thinking, not forgetting their own social responsibilities, and looking at the instrumental role of artificial intelligence rationally, can enterprises complete the elegant transformation of marketing under the background of artificial intelligence and achieve a win-win situation of social and economic benefits.

In the era of artificial intelligence, the development of technology endows marketing with more imagination, automation, precision and intelligence, which will become the three key words for the future development of artificial intelligence in marketing! Based on this, in the future, intelligent marketing will move towards an intelligent marketing system with thousands of people, which will help enterprises gain insight into more accurate user needs, while traditional industries will integrate artificial intelligence technology and business processes substantially, so that enterprises can fully enter the era of intelligent marketing and promote performance growth. Through research, the author summarized the following aspects for the future development of artificial intelligence marketing. [43]

In appearance. Appearance is the most important factor for researchers. Horror Valley theory holds that with the improvement of similarity with human beings, the individual's affection for human-like objects first rises and then falls, causing fear. Due to the limitations of the times, Horror Valley theory focuses on describing the similarity between robot's "shape" and human, while robot's "shape" is different from artificial intelligence's "shape". Future research can take the Horror Valley theory as a starting

point, and explore the factors that influence the change of uncanny valley curve in the field of artificial intelligence. Future research can also consider the relationship between robot shape and task, and more research is needed to verify the preference of users of different genders for smart device shape in different scenarios. In the process of using artificial intelligence devices with different shapes, how do users' cognitive abilities and shopping experiences change? In the previous studies on virtual artificial intelligence, more attention is paid to human reactions with the help of intelligent assistants. Future studies can focus on different scenarios, such as users' reactions and psychological motives under different autonomous authorities, different uses and different psychological conditions.

On the way of interaction. Most researches on interaction methods have focused on language interaction, such as text interaction with intelligent customer service, voice interaction with intelligent speakers, etc., but few researches on visual interaction and tactile interaction. In the study of voice interaction, the influence of different scenarios on timbre and tone, such as the influence of men, women, children, robots and dialects on users, needs further exploration. The research on interaction mode between artificial intelligence and users tends to be multi-channel and multi-task natural interaction scenarios, but the current research on interaction mode mainly focuses on "one-to-one" interaction, and there is little research on "one-to-many" and "many-to-many" interaction. In the future, attention should be paid to the interaction of various factors and the influence of multi-channel integration. At present, most of the research on interaction is human-led interaction, that is, human being is the main initiator of interaction, while artificial intelligence belongs to passive role. However, there are both active and passive interactions. In the field of artificial intelligence, robot-led interaction

can make it have more human characteristics, and future research needs to pay more attention to the interaction between AI robot-led and human passivity. In addition, the current main research object is short-distance and instant interaction, while long-distance interaction and long-time interaction need further study. In addition, with the rapid development of visual biometric technology, face recognition is becoming more and more common, and the influence of new recognition technologies such as face recognition needs to be considered.

The intelligence level of artificial intelligence marketing reflects the ability of artificial intelligence, that is, the ability to solve problems through deep learning, big data analysis and other technologies. Intelligence is an important ability of artificial intelligence marketing. Most of the existing researches on artificial intelligence marketing focus on the improvement of algorithms, while few studies define the connotation of intelligence. Future research should clearly define the concept and dimension of intelligence, and discuss the measurement methods of intelligence level of different products. Technical experts in artificial intelligence marketing are committed to developing intelligent machines that transcend human intelligence. With the development of technology, artificial intelligence marketing will develop from weak artificial intelligence which only solves specific task problems to strong artificial intelligence which can think and make decisions independently like human beings. In the future, there may be super artificial intelligence whose computing and thinking ability far exceeds that of human beings. Scholars believe that people are worried about the marketing of strong artificial intelligence that surpasses human intelligence. In some cases, devices with high intelligence level make users feel that they have lost control or privacy has been violated. In addition, strong artificial intelligence marketing may have

self-awareness, which leads to fear in ethics and security. Finding out the relationship between scenarios and artificial intelligence marketing level is the focus in the future. Future research can also consider the compatibility between users with different personality traits, gender, control level and self-confidence level and the intelligence level of artificial intelligence, and the influence of intelligence level on consumers' practical consumption or hedonic consumption willingness. [44]

Emotion and emotion are one of the future directions of artificial intelligence marketing. Artificial intelligence marketing technology can respond by identifying, perceiving and understanding people's emotions, that is, artificial intelligence will have the ability to observe, understand and generate various emotional characteristics like people. When artificial intelligence has "mind reading" and can experience people's joys and sorrows, how will it affect users' willingness to use it? In addition to paying attention to personality factors and personality factors of intelligent assistants, future research can also pay attention to the matching between users' personality and artificial intelligence marketing assistants.

Technology clustering and integration is the key to the success of intelligent marketing transformation. However, the implementation of technology cannot be achieved overnight, and needs the cooperation of process optimization and model innovation. Therefore, enterprises must combine the actual changes in the market, integrate and innovate with various technology clusters, take PAR model as a reference, and embrace an open mind to innovate comprehensively from multiple dimensions, finally meeting the complex and fast-changing needs of readers while realizing their own transformation and upgrading. On the other hand, the problems that may arise in the application of artificial intelligence also need to arouse our vigilance. Only by

establishing scientific and technological innovation thinking, not forgetting their own social responsibilities, and looking at the instrumental role of artificial intelligence rationally, can enterprises complete the elegant transformation of marketing under the background of artificial intelligence and achieve a win-win situation of social and economic benefits.

Chapter summary: This chapter is the third chapter of the thesis, which mainly discusses the research results and future prospects. First of all, the author made a detailed analysis of the feasibility of Changyu's development of artificial intelligence marketing, and analyzed the feasibility from political, economic, social and technical aspects. The results show that Chang Yu has great advantages in this writing. Then, through PAR theory and 7S model, it puts forward some suggestions to target enterprises and other enterprises. It also analyzes and solves some limitations of artificial intelligence marketing. Finally, the future artificial intelligence marketing is prospected.

CONCLUSION

The main content of my master's thesis is divided into three chapters and four small parts. The first part is about the theory of international marketing, artificial intelligence and artificial intelligence marketing. The second part introduces the basic situation of target enterprise Changyu, analyzes the marketing of target enterprise in detail by 4P theory, and analyzes the existing problems by PAR theory. The third part introduces the development of artificial intelligence marketing in the target market in detail. The fourth part gives suggestions on the future development of target enterprise Changyu and other enterprises, and also looks forward to the future development of artificial intelligence marketing.

In the era of artificial intelligence, 4P marketing based on tradition is not perfect. The reform of artificial intelligence in marketing has become an irresistible trend.

Enterprises can think about new marketing models from a new angle. -PAR theory, a new theory put forward by Don E. Schultz, "integrating marketing guru", puts forward a new way of thinking for enterprise marketing.

Enterprises should fully understand PAR theory and its several elements: Pattern and Platform, Agility and Action, Relevance and Response.

First, enterprises can build an integrated intelligent marketing platform. A rapid and stable marketing platform can guarantee the perfect operation of enterprise marketing activities. "The integration of Internet of Things and various information technologies will bring about qualitative changes in network applications. Intelligent assistants based on big data and artificial intelligence technology will completely subvert the connotation of digital communication platform and upgrade to intelligent assistants with super computing power, learning ability and communication with people".

Enterprises should reshape the marketing mode driven by intelligent technology. In order to upgrade the marketing mode, enterprises need to change

their ideas and focus on providing quality services. The goal of marketing is to attract customers. Therefore, product marketing in the intelligent era should focus on consumers, focus on knowledge service and experience optimization, and change to a "service-oriented" model. Perceive customers' demands, provide targeted strategies, and bring customers a pleasant user experience with fast, simple and effective services, which can not only increase user stickiness, but also create lasting value for enterprises.

Enterprises can build knowledge maps to speed up marketing decisions. Enterprises first need to use machines to conduct research to form the data base of knowledge map. Information stored by computers and sensors and information stored in non-digital form that existed in the past are digitized, which together constitute the content of big data. Artificial intelligence technology can quickly and comprehensively retrieve and collect data, and the comprehensiveness and accuracy of data are greatly enhanced.

Enterprises can insist on using data to guide the implementation of marketing actions. Data mining and semantic analysis technology can widely collect information from the Internet and the Internet of Things, form a big data marketing database of enterprises, build a knowledge map, and then use the powerful computing power of machines to quickly and accurately analyze, form a sales chain for customers' real needs, and improve business results.

Enterprises can strengthen relevance connection and realize comprehensive marketing. Enterprises should introduce artificial intelligence technology based on data analysis to realize data sharing in the whole marketing process, strengthen the correlation of information in all dimensions in big data, and greatly enhance the linkage among all links. Enterprises are no longer concerned about how to develop and spread new products, but can manage the business value of existing and potential customers in the whole life cycle from the perspective of the whole business model innovation. [45]

Marketing is a data-based field, and data processing under these intelligent algorithms is particularly important. It is a new challenge for both managers and

customers. Marketing practitioners should make full use of the technical means of artificial intelligence, change the current situation of marketing industry, improve the efficiency and pertinence of traditional marketing activities, realize customized and intelligent design of products, realize personalized and precise marketing for customers, and fundamentally improve the economic benefits of enterprises and the vitality of products.

In the era of artificial intelligence, a large number of efficiency tools are convenient for people's lives, and at the same time, they also bring advertisements all over the sky. Ineffective junk information can't wait to occupy every minute of people, and artificial intelligence is also contributing to these drawbacks. The author hopes that the influence of artificial intelligence on marketing can develop positively in the future.

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