



Analysis of the Necessity and Opportunities and Challenges of Digital Transformation in the Liquor Industry

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Abstract. In recent years, China's digital economy has developed rapidly. As a traditional manufacturing industry supported by the real economy, the transformation of the liquor industry into a digital economy is not only necessary for the economic situation, but also an inevitable trend for the development of liquor companies, and a key step in promoting the liquor industry to contribute to the Chinese economy and society. This paper analyzes the importance of the digital economy for the liquor industry by collecting and presenting data from multiple channels and different time periods, as well as the new opportunities and challenges that the digital economy brings to the production, sales, marketing and supply chain of the liquor industry, in order to make recommendations on these four areas. This paper provides direction on how liquor companies can adapt to the digital economy to further leverage its value in China, and also provides further insight into how liquor companies can drive their business development.

Keywords: Digital Economy, Digital Transformation, Baijiu Industry Analysis, Online Sales, Supply Chain Analysis

1 Introduction

As a traditional liquor unique to China, Baijiu has been passed down and developed for thousands of years and has always played an important role in China's economic development and social culture. 2021 statistics show that the Baijiu industry provides 6 million jobs and related positions a year, absorbing a large amount of labor and maintaining social stability. The Baijiu industry pays the second highest taxes, making an enormous contribution to the national treasury. Because the industry involves many multiple segments, it drives the development of many industries. Therefore, it is particularly important to promote the development of the liquor industry.

With the development of a new generation of science and technology, digital transformation plays a key role in the development of traditional industries and the real economy. As a traditional industry, Baijiu is also an important pillar of the real economy, and transformation is the trend. Nowadays, Baijiu + Internet + digitalization has become a new industry, and with the introduction of digitalization in the channel and

consumer side, it has become an industry consensus to achieve channel efficiency improvement and accurate consumer reach through digital empowerment. Among them, Mao Tai, Wu Liang Ye, Jian Nan Chun, Yang He, and other first-tier brands have elevated digitalization to a strategic height for the group.

The term "marketing" in the Baijiu industry was only introduced in China after the reform and opening up, and the term "supply chain" was introduced after the 1990s, both of which had a short growth period, so there is still a lot of room for research on these young words in the liquor market. At this stage, the integration of the Baijiu industry with digitalization is far from mature, and there is still much room for growth. The Baijiu industry needs to develop more quickly in line with the trend of the times in order to give it greater value in the Chinese economy.

In summary, this paper focuses on how the Baijiu industry can conform to the development of digital economization in four areas: production, sales, marketing, and supply chain, as a way to improve the core competitiveness of enterprises and thus provide more socio-economic benefits to the country. This paper collects data from the past three years, analyzes the importance of digital transformation in the Baijiu industry, as well as the opportunities and challenges it faces, and ultimately gives recommendations for the Baijiu industry. For the online channel aspect of the Baijiu industry, this paper specifically processes data obtained from TikTok, China's largest short-video platform, to analyze the overall trend in a small way.

2 Basic Description of Liquor

2.1 The Current Situation of the Liquor Industry

As a fully competitive industry and a traditional manufacturing industry, the Baijiu industry is highly competitive and highly market-oriented, with offline sales as the main road, still maintaining the pattern of "one super and many strong". In recent years, the impact of the epidemic, the rapid development of the digital economy and the adjustment of national policies have led the Baijiu industry to enter a period of structural adjustment, with offline consumption being restricted and the dynamic pricing of enterprises not achieving the expected results [1]. The 2022 Annual Baijiu Merchant Status and Development Report shows 33.6% of Baijiu merchants have inventories in the 3 to 5 months range and nearly 40% have inventories of more than five months [2], with most having inventory turnover ratios below 0.75 and high cash flow pressure. The overall output of the Baijiu industry has declined, but with the upgrading of the consumption structure and higher consumption levels, consumers tend to pursue higher quality products, and data show that 44% of consumers are currently consuming an increased grade of Baijiu [2], and the market for high-end and sub-high-end Baijiu consumption is expanding.

2.2 Status of the Digital Economy

Digital transformation is a whole chain and multi-perspective transformation process using digital technology to lead the traditional industry into a new growth phase, which

promotes traditional industrial change through digital production, sales, marketing, supply chain and other multiple links [3]. With the further development of the digital economy form, it was pointed out in the twentieth Central Finance and Economics Commission that the integration of modern industries supported by the real economy and the digital economy should be accelerated. The digital transformation of the traditional manufacturing industry is the general trend, and the report of the 19th Party Congress clearly puts forward the need to accelerate the development of advanced manufacturing industries and promote the deep integration of big data and the real economy.

3 The Importance of Digital Transformation in the Liquor Industry

3.1 Production

Digital manufacturing allocates the resources of each element in the production chain through an intelligent automation system to reduce operating costs, reduce repetitive labor processes, and rationalize the use of resources. Through the digital brewing process control system, the digital full production process achieves orderly and controllable Baijiu production and changes the traditional model of empirical production. It improves the accuracy of resource use, enhances product quality, improves service timeliness, reduces brewing costs, and promotes the transformation and upgrading of the liquor industry [4].

3.2 Sales

As can be seen from Fig 1 and Fig2, the Baijiu industry has an enormous market size, and by 2025 the revenue and production will achieve double growth. The existing sales model is dominated by the distributor agency model, supplemented by direct sales and group purchase channels, with a single model, making it difficult to obtain timely and accurate market information [5]. Traditional large supermarkets and convenience stores are still the main channels for consumers to purchase Baijiu. Among them, traditional large supermarkets occupy nearly 80% of the Baijiu channel in 2023 [2]. With the rapid development of the digital economy, the traditional sales model of the Baijiu industry is no longer responsive to the development of the times. However, the rise of new retail channels such as APP banding and the gradual development of online purchasing habits of Baijiu consumers also provide new development opportunities for the Baijiu industry [6].

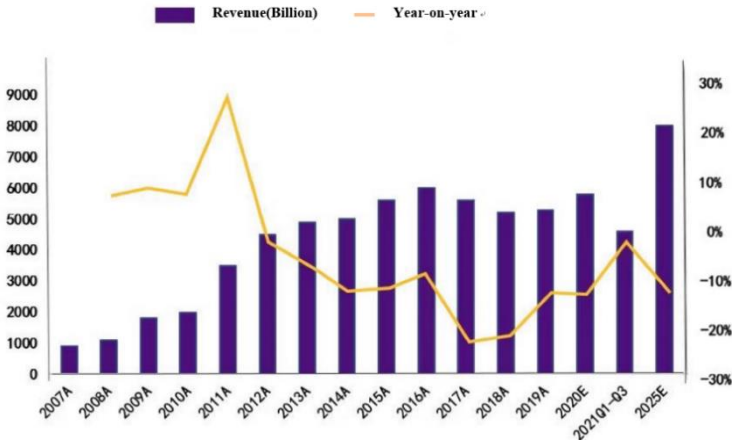


Fig. 1. Baijiu industry revenue trends to 2025[7]. (from: <http://www3.chinaydf.com/newsview/4779.html>)

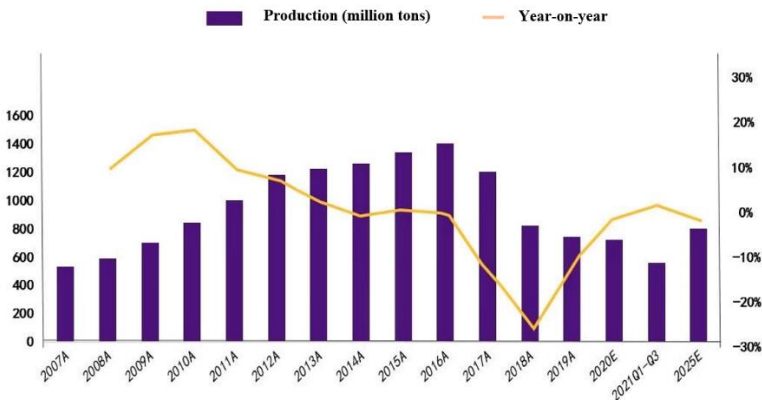


Fig. 2. Baijiu industry production trends to 2025[7]. (from: <http://www3.chinaydf.com/newsview/4779.html>)

3.3 Marketing

Most Baijiu companies have a weak accumulation of data assets, and data analysis stays at the basic analysis stage. In the face of the competitive landscape of "one super and many strong", it is particularly important for enterprises to rely on big data to build marketing platforms in order to develop. Digital marketing of Baijiu uses big data technology to explore product differentiation and personalization in the entire marketing process, such as dynamic pricing, promotional copy, product packaging design, etc.; with the help of its data platform to obtain the missing data resources for deep analysis, thus optimizing the overall marketing process of Baijiu enterprises and enhancing their core competitiveness [8].

3.4 Supply Chain

In recent years, the competition in the Baijiu industry has changed from a single market battle to an all-around competition. Having a complete and sound supply chain system is crucial for enterprises to develop in an environment where competitive pressure is only increasing. Enterprises establish a data platform to connect all aspects of the supply chain, improve the efficiency of data analysis, assist managers in decision-making, promote the flow of information and logistics in the supply chain with high quality and efficiency, and help enterprises improve their core competitiveness.

4 Challenges and Opportunities Facing the Liquor Industry in the Era of Digital Economy

4.1 Production

The production aspect of the Baijiu industry is still the traditional brewing method, and the automation and intelligence of the production process only remain at the level of equipment automation, with high costs, low efficiency, and unstable quality output still existing [9]. In addition, there is also no combination of production links with consumer preferences to expand the consumer market, and the Baijiu industry is in urgent need of sound digital technology used in the manufacturing process to improve the competitiveness of enterprises.

4.2 Sales

The gradual acceptance of the Baijiu online consumption model brings opportunities for change in the sales model. Fig 3 provides the willingness of Baijiu consumers to buy online, and it can be seen from the figure that nearly half (49.7%) of users in 2022 said they would choose to buy online, Fig 4 provides Fig 3 provides Baijiu sales industry in TikTok e-commerce platform, from which the total number of orders and Gross Merchandise Volume (GMV) show an overall incremental increase. These two items indicate that the trend of the Baijiu industry online sales channel is positive. The data show that the number of Baijiu merchandise in TikTok has maintained a high growth rate, and in the first half of 2022, TikTok e-commerce merchandise volume grew at a year-on-year rate of 126.1% [6], which is conducive to the shift of the Baijiu industry to a "distributor + direct sales + online sales" model [5].



Fig. 3. Willingness of Baijiu consumers to buy online [1]. (from: https://pdf.dfcfw.com/pdf/H3_AP202211181580355342_1.pdf?1668763679000.pdf=)

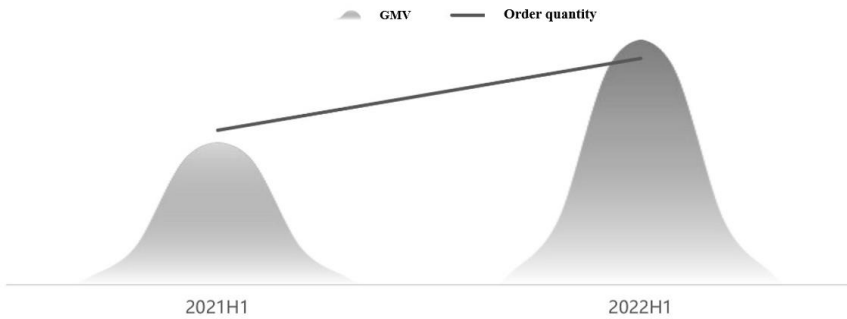


Fig. 4. Baijiu sales industry in TikTok e-commerce platform [1]. (from: https://pdf.dfcfw.com/pdf/H3_AP202211181580355342_1.pdf?1668763679000.pdf=)

4.3 Marketing

In the first half of 2021, the secondary premium segment achieved total revenue of 33.604 billion RMB, up 46.86% year-on-year [10]. Table 1 shows that the share of online Baijiu sales is highest in the "above RMB 1,000" price segment, with the share rising from 37.6% to 39.8%. The share of the price segment "100-300 RMB" is also increasing. However, the share of "under 100 yuan" products fell from 8.5% to 7.3%. These figures prove that consumption power is gradually shifting from the low-end to the next high-end and high-end. Today, the post-90s and post-00s consumer base, which prefers more social platforms, is growing. The Baijiu industry has launched personalized marketing strategies through big data platforms. Depending on the brand and type of Baijiu, dynamic pricing, and regional, online and offline marketing strategies vary. The combination of marketing analytics strategy and enterprise architecture is used to stimulate the purchase desire of different subjects in multiple directions [8].

Table 1. 2021 Q2 to 2022 Q1 Baijiu e-commerce sales [1].

Price band	2021Q2	2021Q3	2021Q4	2021Q1
50 yuan	6.0%	5.1%	3.8%	4.3%
50-100yuan	8.5%	9.1%	6.3%	7.3%
100-300yuan	20.9%	22.3%	16.2%	22.2%
300-600yuan	20.8%	22.5%	17.1%	19.9%
600-1000yuan	12.1%	13.3%	10.7%	10.7%
Over1000yuan	37.6%	32.8%	49.8%	39.8%

(from:https://pdf.dfcfw.com/pdf/H3_AP202211181580355342_1.pdf?1668763679000.pdf=)

4.4 Supply Chain

The Baijiu industry has a large stock-keeping unit, large price differences for individual products, complex order sources, and high requirements for timely information on customer demand, channel inventory information, plan fulfillment rate, and logistics and distribution. Achieving a more flexible and robust one-stop delivery supply chain system with risk resistance is an important link to seize the development opportunities of the industry [11]. Fig 5 provides a one-step structure.

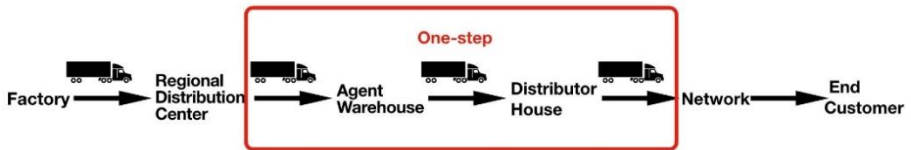


Fig. 5. A one-step structure [6]. (from: <https://finance.sina.com.cn/chanjing/jync/zxxx/2023-01-28/doc-imyctqsk3461656.shtml>All-round Construction of the Baijiu Industry in the Digital Economy)

4.5 Production

The production part can be Based on integrated technologies such as CAD, CAPP, CAE, etc., integrating new sensors for data entry and categorization of optimized blending, flavoring optimization, quality inspection, etc. Use computer-assisted personnel to optimize design calculations and propose optimal solutions to reduce production costs. Use new Internet of Things (IoT) technologies such as narrow Band IoT for data output and instruction communication to dynamically manage the production process [9]. Reduce the repetitive and tedious processes and improve manufacturing accuracy.

4.6 Sales

Companies expand sales channels and build multiple channels for sales. From offline sales as the main road to expand to online areas more intuitive access to consumer information, and build trust with consumers, such as: the establishment of micro-blog

number, shake number and other platform accounts to interact with consumers to provide advice to participate in the production of products, so as to enhance brand awareness and develop loyalty.

4.7 Marketing

Using STP (market segmenting, market targeting, market positioning) theory, market segmentation is conducted based on differences in consumers' buying habits, buying behaviors and needs to develop marketing strategies. For example, based on relevant data, the target group is positioned as TikTok users. Fig. 6 uses the target group index definition (TGI) to derive a high TGI preference (TGI>100) for Baijiu interest users who also love life, especially those who are interested in finance and car-related people who prefer baijiu. Based on this and then develop the corresponding marketing strategy.

TGI = the proportion of a feature in a field / the proportion of a feature in the overall * 100

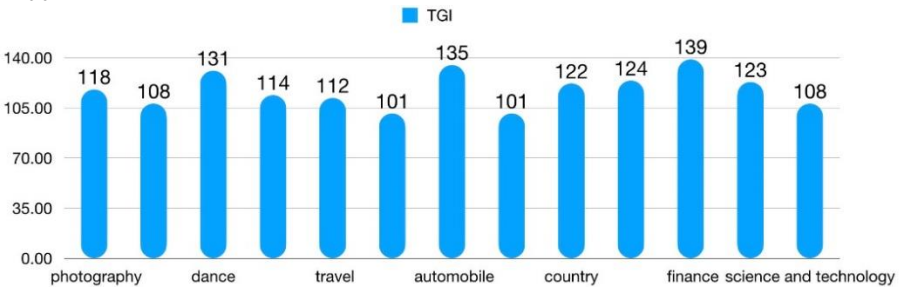


Fig. 6. Baijiu user content interest preferences [1]. (from: https://pdf.dfcfw.com/pdf/H3_AP202211181580355342_1.pdf?1668763679000.pdf)

With the continuous rejuvenation of the consumer body, Baijiu companies can make new marketing strategies to combine with new trends of the times, "brand story shaping, cultural integration, etc."

4.8 Supply chain

Enterprises establish digital management systems. Improve the Baijiu supply chain through information technology, and use SCM systems to integrate and optimize information flow, logistics, and capital flow in the supply chain to improve the competitiveness of enterprises. The data analysis, control and optimization of the whole supply chain process is realized from the cultivation and procurement of raw materials, sales logistics, and channel logistics to the final consumers [9].

5 Conclusion

This paper studies the importance of digital transformation for the Baijiu industry, thus analyzing the corresponding opportunities and challenges in four aspects of the Baijiu

industry: production, sales, marketing, and supply chain, and making corresponding recommendations on how to carry out digital transformation in the four aspects of the liquor industry to meet the development trend of the times. This paper can help liquor companies realize the importance of the digital economy for their business development so that they can incorporate digital transformation into their business strategies and provide suggestions for further digitalization and informatization in the four areas. However, the offline data obtained for the business analysis in this paper is only for the last three years, and there may still be problems of imperfect analysis. Online data are mostly taken from the TikTok platform, or there are biases in the analysis. If we want to analyze the Baijiu industry in the digital economy more accurately we need more data to support further research.

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