

Research on Sports Apparel Brand Strategic Planning Under the Background of Big Data: Li Ning Company as an Example

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Abstract: In this paper, Li Ning Company as an example, for its development of appropriate marketing strategy, the second part is the general profile of Li Ning Company; Thirdly, it analyzes the marketing environment facing Li Ning Company and the opportunities and challenges brought by the novel coronavirus epidemic. The fourth part plans the digital marketing platform of Li Ning Company according to ESP model and "5S" strategy method. The fifth part is to design the effective search engine marketing plan for Li Ning Company; The sixth part combines the development of big data and artificial intelligence technology to talk about how Li Ning Company will realize data-driven big data marketing in the future.

1 INTRODUCTION

Since the outbreak of COVID-19 in 2020, the virus has severely tested the world's societies and economies. According to estimates from the world bank, the impact of COVID-19 resulted in a global recession unlike anything seen in 80 years. This recession has had huge ripple effects across the globe, bringing the global economy to an unprecedented halt, resulting in higher unemployment, lower retail spending and lower

consumer spending. As a traditional livelihood industry, textile and clothing industry has played an important role in expanding the market, balancing foreign exchange payments and creating employment. Considering that the impact of the novel coronavirus will continue for some time in the future, it is very important to assess its impact on the garment and textile industry and use big data to help enterprises develop their own online marketing strategies to ensure recovery from the crisis (Wang and Sindy, 2022).

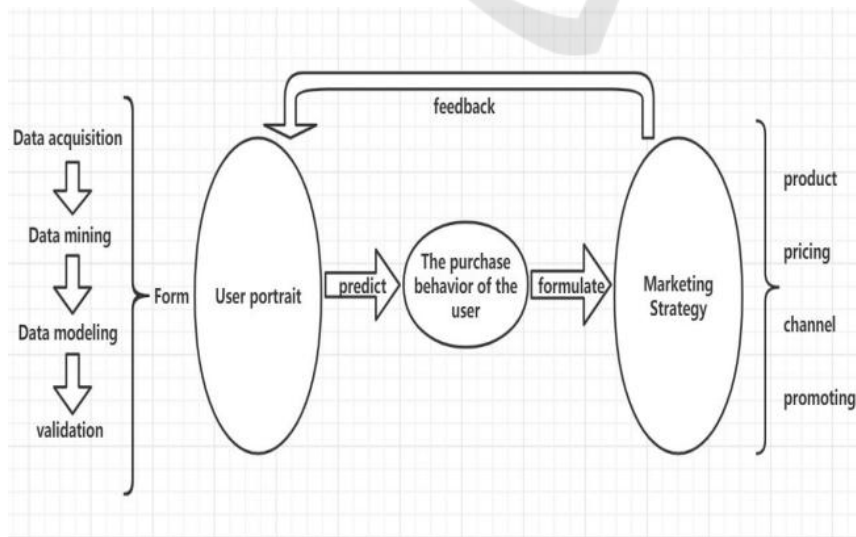


Figure 1: Marketing digital decision model.

2 OVERVIEW OF LI NING COMPANY

Li Ning Company was founded in 1990, its headquarters is located in Beijing Zhongguancun Park, after more than 30 years of exhibition, Li Ning has gradually become a well-known clothing brand at home and abroad. In 2008, Li Ning had more than 6,000 offline stores. After several years of development, the company's revenue exceeded 10 billion yuan in 2010, surpassing the old German company Adidas. But then inventory build-up, peer competition and marketing choices led to a series of store closures over the next few years. Until 2015, Li Ning Company changed from offline retail and equipment supply to "Internet + sports life experience", and returned to the domestic first-tier brand with the marketing strategy of multi-brand, multi-variety, online and offline multi-channel operation, thus enhancing brand awareness and brand recognition.

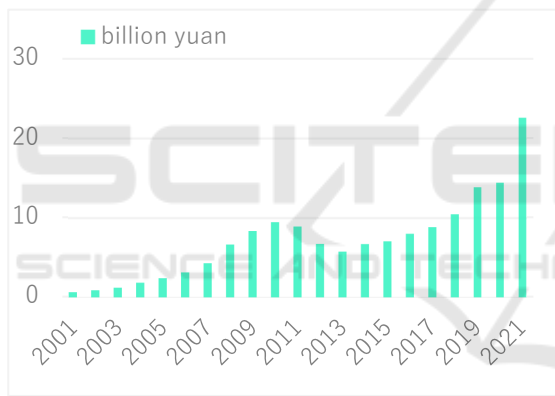


Figure 2: Annual turnover of Li Ning Company.

The ARIMA model is a short-term predictive analysis method with high accuracy based on the correlation measures in different periods of the sequence. This method was proposed by American scholar Box and British statistician Jenkins in 1976, so it is also called Box-Jenkins model. In the ARIMA model, the future value of a variable can be expressed as a linear function of several past values and random errors.

$$\begin{cases} \Phi(B) \nabla^d X_t = \Theta(B) \varepsilon_t, \\ E(\varepsilon) = 0, \text{Var}(\varepsilon) = \sigma_\varepsilon^2, E(\varepsilon_t \varepsilon_s) = 0, s \neq t, \\ E(x_s \varepsilon_t) = 0, \forall s < t. \end{cases}$$

$$\nabla^d = (1 - B)^d$$

$$\Phi(B) = 1 - \varphi_1 B - \dots - \varphi_p B^p$$

$$\Theta(B) = 1 - \theta_1 B - \dots - \theta_q B^q$$

In which B is backwards operator, ε_t is the random disturbance or random error of every period, d is difference order, p and q are respectively autoregressive and moving average order number, order the X_t is the observed value of every period ($t = 1, 2, \dots, k$).

The establishment of ARIMA time series model can be summarized into three stages, that is, sequence stabilization, model recognition, parameter estimation and model diagnosis. Through the repeated processing of these three stages, an "optimal" model for forecasting is finally determined.

Finally, we use this model to forecast Li Ning's annual revenue and profit in the next three years.

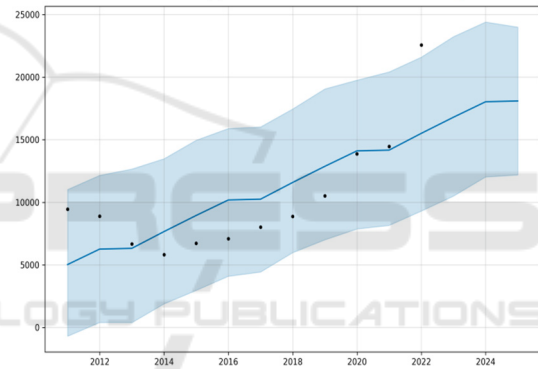


Figure 3: Li Ning Company Annual Revenue Forecast (million Yuan).

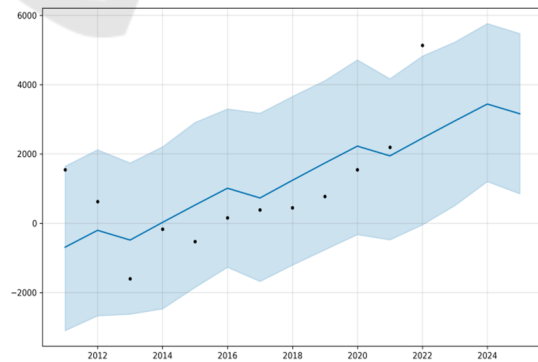


Figure 4: Li Ning Company Annual Profit Forecast (million Yuan).

3 SWOT ANALYSIS OF LI NING COMPANY'S MARKETING ENVIRONMENT

Table 1: SWOT analysis of Li Ning Company.

The internal environment	Internal strengths	Internal weaknesses
	<ul style="list-style-type: none"> ● Sponsorship of domestic events ● The application of Internet platform 	<ul style="list-style-type: none"> ● Offline stores are competing with online sales ● The quality and training of talent is inadequate
The external environment	External opportunity	External threats
	<ul style="list-style-type: none"> ● The garment industry has improved its level of innovation ● The development of e-commerce platforms 	<ul style="list-style-type: none"> ● Competition from other well-known brands ● Consumer loyalty to other brands

3.1 Analysis of Internal Strengths

Li Ning has relied on its sponsorship of major and domestic competitions to increase its exposure through its long-standing partnership with the national team and the CBA league. As the exclusive sponsor of the CBA, Li Ning, whose jerseys and sneakers are worn by players and coaches, has gained exposure in recent years as the number of spectators has grown.

At present, the rapid popularization of the Internet has changed the traditional communication mode. Li Ning can directly obtain the consumer demand of users by using the public account platform, Weibo and a series of mobile terminal apps, providing new ideas for the development of the brand in the future.

3.2 Analysis of Internal Weaknesses

Under the background of Internet +, all major clothing brands carry out multi-channel marketing through offline physical stores and online sales, and all brands bloom. If they do not have core competitiveness that is different from other brands,

they will be severely impacted (Luo, Ge, Chen and Li, 2021). At the same time, the manufacturing and sales talents involved in the garment industry need to keep pace with The Times, but Li Ning's training mechanism for such talents is not perfect, resulting in a shortage of talent reserve.

3.3 Analysis of External Opportunity

With the rapid development of the Internet and the constant iteration of information technology, Li Ning's development offers opportunities. With the introduction of related policies such as Made in China 2025, the sports apparel industry in China is constantly transforming, and the ability of independent innovation has been significantly improved. The development of e-commerce platform provides an important opportunity for Li Ning's product sales, which makes the sales revenue of products on the online platform increase significantly.

3.4 Analysis of External Threats

For the sports apparel industry, well-known international brands such as Adidas, Puma and Nike are at the top end of the global value chain, and consumers have high loyalty to these brands. By contrast, Li Ning rose late. Although its brand has attracted attention at home and abroad, customers are more willing to choose Adidas and Under Armour for the same price.

4 LI NING COMPANY'S DIGITAL MARKETING PLATFORM PLANNING BASED ON ESP MODEL

4.1 Environment (E)

With the rapid development of the Internet, the traditional media is gradually occupied by the network media.

According to the China Economic Annual Report 2020 released in January 2021, the total annual retail sales of consumer goods in China was 39,981 billion yuan, down 3.9% year on year, but the online sales continued to grow. The annual online retail sales in 2020 was 11,7601 billion yuan, up 10.9% year on year, among which the online retail sales of physical goods were 9,759 billion yuan. Increased by 14.8%, accounting for 24.9% of the total retail sales of

consumer goods, an increase of 4.2% over the previous year. Among them, the retail sales of clothing was 1,236.5 billion yuan, up 6.6 percent year on year.

4.2 Strategy (S)

With the development of the network, Li Ning brand can obtain users' information feedback at a low cost, so that the effect of commercial activities can be convenient and effective. At the same time, because the network makes the information filterless and consumer trust and other factors have a certain interference to the brand. Li Ning brand should adjust its strategy to achieve its marketing objectives by integrating various factors.

Table 2: Digital Marketing Strategy.

category	strategy
The electronic commerce	Official websites can cooperate directly with e-commerce platforms It is active on multiple platforms
Social media	Strengthen user interaction and communication, timely integration of social media
Mobile terminals	It also released its own branded mobile apps for Android and iOS systems
The network game	Inject your own brand elements into your game and extend your brand

4.3 Performance (P)

Through digital marketing, Li Ning can build its own digital world, understand the brand's potential customers and their needs through multi-platform marketing, and then prioritize the design content that is beneficial and attractive to the customers. The effects of digital marketing not only directly affect the size and growth rate of users, business contributions and interactive activities, but also the negative feedback from users cannot be ignored. Li Ning should take a rational attitude to the negative evaluation of consumers and make a timely response.

5 SEARCH ENGINE SOLUTION

Search engine optimization refers to the use of search engine working mechanism or algorithm, visit a specific website, systematically improve the quantity and quality of traffic (Silvia and Claudio, 2021). Search engine optimization (SEO) is a technique that applies to optimizing websites. Users enter the keywords they want to know to search and get what they want with the help of search engines. Search engines have been widely used in the past few decades. After literature reading, we sorted out the index list for analyzing webpage ranking (Andrew and Vaughan, 2022), as shown in Table 3.

Table 3: Page ranking indicators.

indicators	description
Page rank	The metric used by Google Search to rank websites in its search results
Page authority	Permissions that represent a specific page or URL on a scale of 1-100 Represents the authoritative 1-100 scale of a domain name, which is a measure of the strength of the predicted ranking of domain names, including subdomains
Domain authority	Represents the popularity of global links on a scale of 1 to 10 Represents Moz's global Link trust score. It measures link trust and checks for reliable sources to receive links
MozRank	
MozTrust	
Citation flow	A metric provided by MajesticSEO, which uses the number of websites linked to it, Majesticseo, to predict how influential a web page is. The more links to the site, the higher the CF value Another index, on cover, MajesticSEO, predicts the trustworthiness of web pages. Trustflow is computed using the distance of backlinks from trusted and old domains
Trust flow	
Alexa rank	Alexarank refers to the use of user visits and page views to calculate Alexa traffic ranking It is a metric given by Ahref to measure the strength of a backlink or target webpage, usually on a logarithmic scale of 1-100 Ahref calculates the logarithmic scale of a web page's backlink profile, from 1-100
URL rating	
Domain rating	
Ahref rank	Ahref's rankings compare backlinks

	to websites. It is calculated using size and domain name rating
Google index	The number of specific pages that Google is able to crawl or index on a website
Social shares	Page sharing on Facebook, twitter, google plus and other social media platforms
Domain age	It is a metric that gives the approximate age of a website and is often used to rank web pages on search engines

5.1 The Theme Should Be Clear and the Content Should Be Rich

Before updating the official website of Li Ning, it is necessary to set a clear main body and target, and position the website according to the characteristics of the campaign and the brand. Meanwhile, Li Ning, as the leader of domestic sportswear brands, needs to update its own brand culture in time.

5.2 Website Links Should Have High Popularity

Search engines judge the quality of a site by the number of external links and the quality of the linked site. Therefore, Li Ning Company should strengthen its own internal construction, improve the connection of the wide degree, the production of high-quality web pages.

5.3 Be Specific in Your Key Words

The keyword setting of the website is very important. If a website wants to be retrieved by more users, it needs to be more rigorous in the formulation of keywords, not to blindly pursue hot words, but to combine with its own brand and culture.

5.4 the Site Structure Should Be Clear

In the design of the website organization, the framework should be avoided as much as possible, and the use of FLASH should be minimized in the design of navigation entries. At the same time, since the root directory is the fastest to retrieve, usually to the site's home page file set there. In addition, the site's subdirectory Settings should not be too much, the detailed directory Settings should not exceed four levels.

6 BIG DATA MARKETING

Big data is carried out in the mode of peer-to-peer advertising. The core of big data is to find the target audience from the massive data and accurately deliver information to them, so as to maximize the communication effect. There are three advertising modes based on precision marketing, which are more suitable for Li Ning brand.

The first form is to directly communicate with third party advertising agencies to develop personalized and accurate marketing solutions for the brand and build a brand database. To be specific, the two parties first determine the target of advertising through negotiation and choose the media platform suitable for the brand. Secondly, according to the keywords such as gender, occupation, region and interest, the purchase preferences of different groups under different media platforms are identified, and consumers are divided into three levels: understanding, participation and purchase (Wei, 2022). Design marketing content for different levels of users and push personalized advertising display.

The second form is Dsp based precision marketing. Before advertising, brand managers can entrust advertising agencies to carry out creative planning according to the different online and offline marketing methods. In terms of online and offline activities, consumers with a certain number of online activities can exchange some gifts in offline stores.

The third form is to carry out multimedia marketing. In WeChat marketing, there should be a link to other platforms, so that consumers can jump to the product details page while seeing the advertising pattern, so that they can browse and buy products conveniently, time-saving and efficiently.



Figure 5: Factors influencing online shopping behavior.

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