Analysis of the Impact of Artificial Intelligence on the Transformation of Marketing Models

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Abstract: In the era of artificial intelligence, fundamental changes have taken place in consumer information acquisition, product selection, and post-purchase experience sharing, resulting in consumption showing fragmentation, diversification, individualization, and rationalization, which is critical to the market, especially the traditional marketing model of China raises serious challenges. How to formulate a new marketing model that adapts to the consumption characteristics and market environment in the era of artificial intelligence is a difficult problem for my country's marketing. The purpose of this article is to analyze the impact of artificial intelligence in the transformation of marketing models. This article first summarizes the basic theory of artificial intelligence technology, and then extends the core technology of artificial intelligence, and then combines the contemporary marketing model of our country, analyzes its existing problems and shortcomings, and applies artificial intelligence technology to the marketing model. This article systematically expounds the changes in marketing with the advent of the era of big data and artificial intelligence, and through comparative analysis, studies the basis and conditions for the integration of artificial intelligence and marketing. This article aims at the impact of artificial intelligence on the transformation of marketing models. Through theoretical analysis, comparative analysis and other research methods, the theme of this article is studied. Experimental research shows that the impact of artificial intelligence on marketing models is significant. Compared with traditional the marketing model, using artificial intelligence, is more feasible for marketing.

1. Introduction

Marketing strategy is an important part of business management and a valuable resource for business operation and development [1-2]. Accurate marketing strategies can promote companies to improve marketing efficiency, enhance market competitiveness, and help companies achieve rapid and efficient development [3-4]. Therefore, it is very necessary for companies to study the market environment and competitive situation, make timely changes to marketing models in the era of artificial intelligence, and formulate marketing strategies suitable for their own characteristics [5-6].

In the influence of artificial intelligence in marketing models, many scholars have achieved good results. For example, Philip believes that brands have flooded our lives. Therefore, for brands, companies must shape a consumer's impression of the brand; especially the consumer's consumption process and brand image are closely related [7]. In addition, companies usually think that advertising is the fastest way to build a brand [8-9]. Guo Wei believes that online marketing should not be pure online information release or online sales, but should be a marketing tool that integrates information release, online sales, customer experience, technical support, and after-sales service. It is a comprehensive community network and an enterprise, an integral part of the overall marketing strategy [10]. Only in this way can it cover the complete purchase process of consumers from determining purchase needs, collecting information, to implementing purchase and evaluation comparison [11-12].

The main purpose of this paper is to increase the marketing rate, with the purpose of studying the

impact of artificial intelligence on the marketing model. Based on the deficiencies of the marketing model, this article explores the impact of the use of artificial intelligence technology on the transformation of the market model. And conduct inquiries and analysis on the application of artificial intelligence technology in marketing.

2. Analysis of the Impact of Artificial Intelligence on the Transformation of Marketing Models

2.1 Analysis of Traditional Marketing Models

In the marketing model of traditional enterprises, consumers make purchase decisions mainly in the actual shopping process. Generally speaking, only some products with higher commodity value will be compared with the three. This comparison will affect the purchase decision. There is a certain degree of influence. However, as far as daily consumer products are concerned, consumers' purchasing decisions are mainly in the shopping process, and are not greatly affected by other parts. In addition, consumers' satisfaction with products mainly depends on the function or effect of the product itself. The market segmentation of consumer groups is based on the fuzzy division of product functions or effects. There is less effective communication between enterprises and consumers, so it is difficult for enterprises to obtain consumer experience.

2.2 Application of Artificial Intelligence to Marketing Model

(1) With the rapid development of computer technology, the rapid improvement of computing power and the maturity of various algorithms, artificial intelligence technology is closer to people's lives step by step, and has a profound impact on people's clothing, food, housing, and transportation. Nowadays, every aspect of the marketing process has artificial intelligence "figures", such as intelligent manufacturing, dynamic pricing, unmanned retail and independent creativity. The entire marketing industry is facing a new round of changes and upgrades.

(2) In today's artificial intelligence era, consumers use online platforms to search for products to pay for orders, view logistics information, and product usage. Every aspect of their experience will have an impact on consumers' purchasing decisions. If a product or service fails to maximize the personal needs of consumers in one of these links, it may cause consumers to leave. In the era of mobile Internet, companies use various media channels supported by online platforms to carry out real-time marketing for consumers throughout the entire process. Consumers have the opportunity to express their own series of suggestions and opinions in terms of product design, pricing, and services. At the same time, it is possible for companies to get feedback from consumers in a timely manner and adjust their decisions accordingly, thereby improving consumer experience, satisfaction and loyalty.

2.3 Analysis of Marketing Environment

Starting from the resources it owns and combining its own capabilities in production technology, talents, finance, marketing and organizational management, the company analyzes its strengths and weaknesses, maximizes its strengths and avoids weaknesses, and gains advantages in market competition. Enterprises must base themselves on their own strengths, establish their own business positioning, give full play to their advantages, maximize them, reduce disadvantages as much as possible, minimize them, and finally find a space suitable for their own survival and development.

2.4 Performance Comparison between Traditional Marketing and Online Marketing

(1) Compared with online marketing channels, traditional marketing channels

1) Store decoration and inventory requirements lead to high investment in fixed assets

2) The training of promoters increases the cost

3) The sales area is limited, often limited to the surplus of local retail companies, and the competition is fierce

(2) Compared with online marketing channels, traditional marketing channels

1) The product introduction is complicated, and the pictures and text are not as intuitive as the

actual product.

2) There are many middlemen, and the price is increased layer by layer, which increases the unit price of the product

3) Consumers are more prices sensitive

In the current information age, artificial intelligence technologies such as databases, online analysis and data mining are used to process and analyze data information. Marketing is to transform data information into required knowledge, and use big data to discover and process knowledge, which can bring obvious economic benefits to enterprises and obtain obvious competitive advantages in the same industry.

2.5 SWOT Analysis Model

SWOT is currently a model widely adopted by enterprises. SWOT analysis is used to determine the company's own competitive advantages, competitive disadvantages, opportunities and external threats, so as to organically integrate the company's strategy with the company's internal resources and external environment. Steps of SWOT analysis:

1. List the company's strengths and weaknesses, possible opportunities and external threats.

2. Combine strengths and weaknesses with opportunities and threats to form a strategy of strength opportunity, strength threat, weakness opportunity, and weakness threat.

3. Identify and select the strategies of strength opportunity, strength threat, weakness opportunity, and weakness threat, and clarify the specific strategies and tactics that the enterprise should adopt at present.

Finally came to the following conclusions:

(1) How to maximize the use of its own resources in the company's existing internal and external environments;

(2) How to build the company's future resources.

2.6 Data Normalization

In many cases, the eigenvalues to be processed have different dynamic ranges. Therefore, in the evaluation function, the large-value features have more influence than the small-value features. This problem is solved by feature normalization so that they are in the similar range. A simple method is to normalize with the estimated values of the respective mean and variance. For N data of the kth feature, there are

$$\overline{x_k} = \frac{1}{N} \sum_{i=1}^{N} x_{ik}$$

(1)

All normalized features have zero mean and unit variance. Obviously this is a linear method. Another linear method is to limit the eigenvalues to the range of [0,1] or [-1,1] through an appropriate ratio. In addition to the linear method, when the data is not evenly distributed around the mean, a non-linear method can be used:

$$y = \frac{x_{ik} - \overline{x_k}}{r\ell_k} \quad \widehat{x_{ik}} = \frac{1}{1 + \exp(-y)}$$

(2)

This breaking function limits the value to the range [0,.1]. Through a series of extended approximations, it is not difficult to see that when y is very small, the above formula can be regarded as an approximate linear function of xik. The range of the linear region xik depends on the standard deviation and the coefficient r, r is user-defined and the value away from the mean is reduced exponentially.

3. Experimental Research on the Impact of Artificial Intelligence on the Transformation of Marketing Models

3.1 Subjects

(1) Subject to the difficulty of obtaining data on various formats of the marketing industry in my country, based on the existing public data, this article is based on the "2015 China Top 100 Retailers List" issued by the China Federation of Commerce and the All-China Business Information Center. Analysis of marketing development in my country.

(2) In order to further influence the impact of artificial intelligence in the transformation of marketing models, this experiment analyzes the marketing of artificial intelligence technology on the basis of traditional marketing models to determine the impact of artificial intelligence technology on marketing models.

3.2 Experimental Method

(1) Questionnaire survey method

This article distributes targeted questionnaires to marketing staff in a certain market, and adopts a semi-closed method, the purpose of which is to promote the correct filling of relevant personnel.

(2) Field research method

In this study, we went deep into a local sales market and conducted face-to-face interviews with relevant sales personnel. Normalize the data collected from the interview to obtain more accurate and effective data materials. These data not only provide theoretical support for the topic selection of this article, but also provide a reliable reference for the final research results of this article.

(3) SWOT analysis method

This experiment objectively points out the problems and shortcomings of the current marketing model in the era of artificial intelligence through the use of analytical methods, and proposes an improvement plan for the operation model and future development trends.

4. Experimental Analysis of the Impact of Artificial Intelligence on the Transformation of Marketing Models

4.1 Analysis of Marketing Development

Since the reform of the circulation system in 1978, China's marketing industry has achieved rapid development and made remarkable achievements, gradually satisfying the increasing demand for diversified commodities of the broad masses. In this experiment, the sales market in a certain place was explored and analyzed, and the results obtained are shown in Table 1.

Table 1. Analysis of marketing development

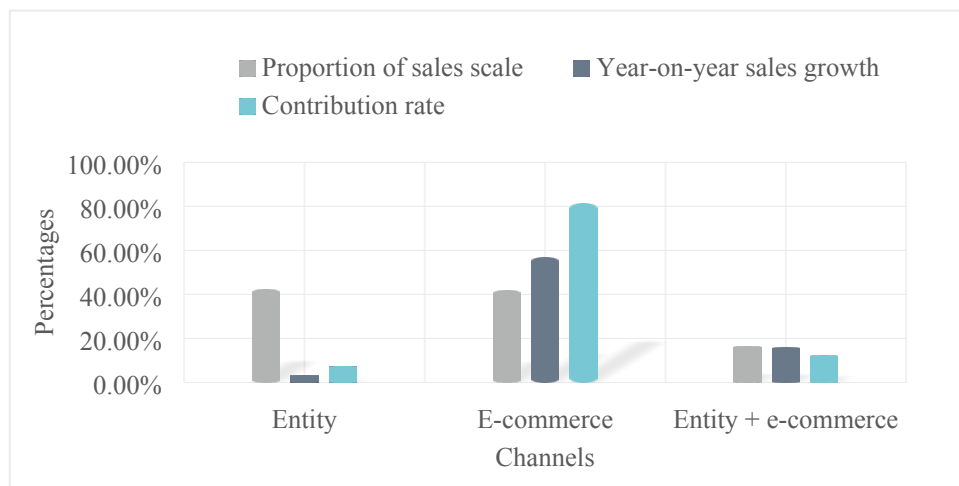|	Entity	E-commerce	Entity + e-commerce
Proportion of sales scale	42.1%	41.9%	16.4%
Year-on-year sales growth	3.4%	56.8%	16.0%
Contribution rate	7.2%	81.2%	12.3%

Figure 1. Analysis of marketing development

As can be seen from Figure 1, in contrast, the sales growth rate of physical enterprises is relatively slow, much lower than that of e-commerce companies and "entity + e-commerce" companies. In 2015, entities accounted for 42.1% of the total and contributed the lowest rate to overall sales growth. This means that the market share of physical retail companies in the retail industry is declining, and they are facing unprecedented development difficulties. They are required to actively adjust their marketing strategies to adapt to the rapidly changing market environment and seek development opportunities in market changes.

4.2 Comparative Analysis of Marketing Models

In order to further explore the impact analysis of artificial intelligence on the transformation of marketing models, this experiment randomly surveyed sales practitioners in a certain place. A total of 50 people were surveyed this time, and the ratio of men to women was equal. The data obtained are shown in Table 2.

Table 2. Comparative analysis of marketing models

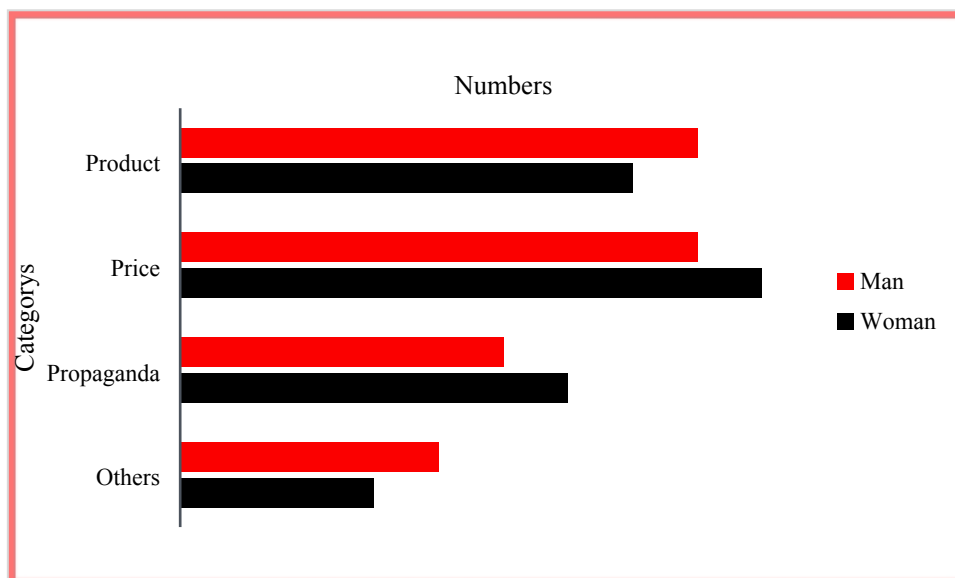|	Product	Price	Propaganda	Others
Man	8	8	5	4
Woman	7	9	6	3

Figure 2. Comparative analysis of marketing models

As can be seen from Figure 2, most people believe that artificial intelligence has a greater impact on marketing products and prices. More than 20% of people believe that the marketing announcement effect using artificial intelligence technology is better than traditional marketing models. This fully illustrates the far-reaching influence of artificial intelligence on marketing models and the feasibility of using artificial intelligence in marketing.

5. Conclusion

If a marketing company wants to gain an advantage in peer competition, it must accurately analyze the market, users and business conditions, and finally make corresponding decisions based on history and future development. But the current marketing process cannot do this. This is because traditional databases are too cumbersome and complicated, and managers who want to extract useful information have to consume expensive human and material resources. How to make good use of artificial intelligence technology in corporate marketing has become the key to improving efficiency.

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