

Research on the Innovation of Enterprise Digital Marketing Model in the Era of Digital Economy

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Abstract: The digital economy is having a more profound impact on the global and Chinese economic development trend. The digital economy drives the technological progress of enterprises, but also poses new challenges to the way enterprises operate. Customers' consumption habits have changed, sales channels are being rebuilt, and marketing models need to be innovated. Through research, the paper puts forward hypotheses and countermeasures to influence the introduction, application and innovation of digital marketing mode from three aspects: strategic operation management level, enterprise business model design and enterprise e-commerce technology. Through the innovative application of digital marketing model, enterprises can cope with the challenges brought by the digital economic environment.

1. Introduction

The G20 Hangzhou Summit defines digital economy as a series of economic activities that utilize digital knowledge and information as key elements of production and modern information with information network as an important carrier [1]. The effective use of information and communication technology is an important driving force for improving efficiency and optimizing economic structure. American businessman Tap Scott Don first proposed the term "digital economy"[2]. In recent years, the digital economy has developed rapidly on a global scale.

The traditional marketing model focuses on the design of products and services and the construction of physical channels [3]. In the digital economy environment, it is necessary to establish and continuously optimize the digital marketing model based on digital technology to achieve all-round and all-weather communication between enterprises and enterprises, enterprises and customers, customers and customers. There are three types of mechanisms and strategies affecting consumer behavior in operation management: pricing, inventory and information [4]. Based on B2C e-commerce business model, e-commerce online order scheduling is realized, and a logistics distribution model based on artificial intelligence resource allocation strategy is proposed [5]. Digital marketing will make use of advanced computer network technology as much as possible to seek the development of new markets and new consumers in the most effective and cost-effective way. Although scholars have made relevant studies on how enterprises can better operate in the era of digital economy, they lack systematic and targeted studies on the essence of the problem and countermeasures, and propose countermeasures.

2. Literature review

2.1 The level of enterprise strategic operation management

Strategic operations management is the strategic management of the systems or processes that create products or provide services Reason. Stephen Covey(2004)tells a story in his book *The Seven Habits of Highly Effective People*: A group of people are building a road, and although they seem to have leadership, order, and division of labor, one day a man climbs a nearby tree, looks down on the project from the top, and shouts to everyone, "Wrong way! [6]" This story enlightens us that whether the enterprise's strategic operation management is correct or not affects the success or failure of the enterprise's business decision. As an emerging marketing method, digital marketing still takes achieving marketing objectives as its task. As an important function in strategic operation management, marketing needs to fully grasp the technical characteristics of digital marketing and realize marketing objectives by means of Internet, computer communication technology and digital interactive media. Therefore, one of the hypotheses of this study is that the level of strategic operations management affects the introduction of digital marketing.

2.2 Enterprise business model

To some extent, the mission of enterprises is to create and deliver value, so that customers feel and accept value, which is a process of value chain presentation. In order to ensure the stability of this value chain, enterprises need to establish a comprehensive and systematic mechanism suitable for their own development. That's the business model [7]. The term business model first appeared in the 1950s. The term "business model canvas" was first coined by Alexander Osterwalder and Yves Pigneur in their book *The Business Model Generation*. Business Model Canvas is a business model analysis tool. It divides the business model into 9 modules, which are value proposition, customer segmentation, channel path, customer relationship, revenue source, core resources, key business, important partners, and cost structure. Of these, the first four modules are actually in the field of marketing. Digital marketing realizes the convenience of obtaining customer information and insight into consumer habits through digital technology, making the customer segmentation and channel design of enterprises more simple and accurate. It can be seen that the role of digital marketing is to help enterprises adapt more directly to the changes in the digital economic environment and realize the creation and delivery of value more effectively. And enable customers to obtain value. The role and value of digital marketing is built on the business model of the enterprise. Therefore, another hypothesis of this study is: what kind of business model to choose will affect the selection and optimization of digital marketing model.

2.3 Enterprise e-commerce technology

Technology management is particularly important for enterprises in the era of digital economy, because the digital economy relies on digital technology to develop. Technology Management (MOT) is concerned with development, planning, implementation & assessment of technological capabilities to shape and accomplish the strategic & operational objectives of an organization or central planning goals and priorities of a nation [8]. Electronic commerce is an important form and component of digital economy. E-commerce is a commercial activity with information network technology as the means and Commodity Exchange as the center.

Under the digital economy environment, commodity exchange and business activities also need to use marketing means, the difference is that it needs to use digital marketing means, and it needs to build digital marketing model and innovation. Therefore, the third hypothesis of this study is that

enterprise e-commerce technology affects digital marketing model innovation.

2.4 Research Framework

According to the research questions and assumptions of this paper, this paper constructs the following research framework. (As shown in Fig. 1)

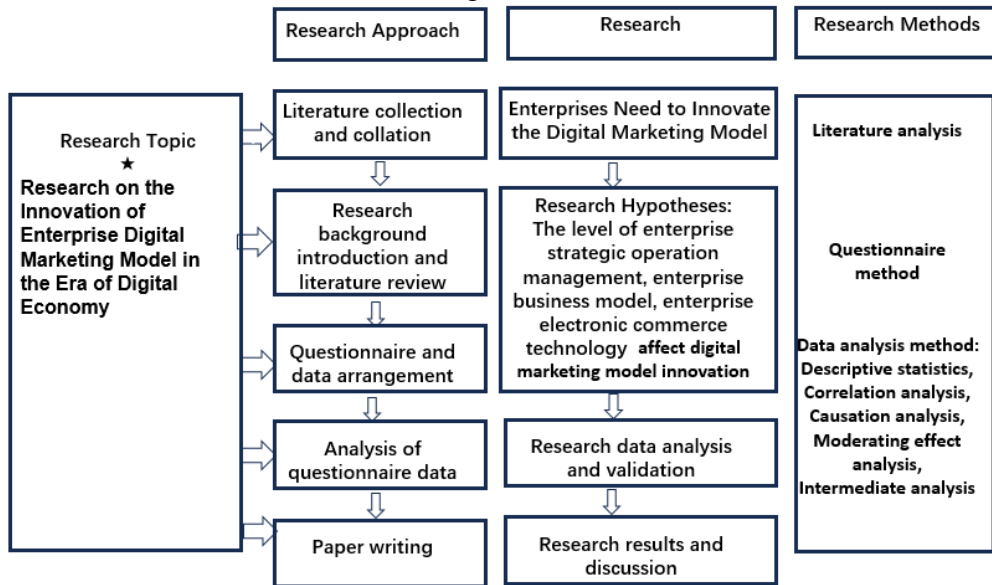


Figure 1: Research framework

3. Research methods

3.1 Research Design

On the basis of theoretical analysis, this paper uses quantitative research methods to test research variables and research hypotheses. The dependent variable of this paper is enterprise digital marketing model innovation (DMI). The independent variable of this paper is the strategic operation management level (SOM). The intermediary variables in this paper are enterprise business model (BM) and enterprise e-commerce technology (EC). Data were obtained by questionnaire survey.3.2 Data collection and sample

This study adopts the method of questionnaire survey to collect data from two service enterprises in Zhengzhou, Henan province Set. The two companies are similar in business and size. In addition, we are familiar with the company business owners can obtain effective questionnaire.

The main data came from professional and part-time employees of two service enterprises in Zhengzhou, Henan province. Due to the large number of questionnaires distributed by wechat, whether the other party is an employee of these three companies lacks reliability. Therefore, the sample size of the unknown population will be determined using the Cochran equation.

In this study, the required accuracy is set to 5% and the margin of the required confidence level (Z) will be set to 95% (1.96). Because the accuracy of 1% is too high and the accuracy of 10 is too low, we use the commonly used intermediate accuracy of 5%. The inherent difficulty of finding and acquiring creative clients willing to participate in this survey will lead us to select and prove a 5% margin of error.

Therefore, the formula for calculating the sample size is:

$$n = \frac{[Z^2 * p(1-p)]}{e^2}$$

Where: n=sample size; Z=selected critical value for desired level of confidence; p=proportion of an attribute that is estimated to be present; e=variance of error. Using this formula to the actual data will result in:

$$n = \frac{[1.96^2 * 0.8(1 - 0.8)]}{0.05^2} = 245.86$$

This paper intends to obtain 320 samples. In fact, we got 331 valid questionnaires in the end.

3.2 Data Analysis

In this study, the hypothesis is empirically tested by combining the existing theories. The questionnaire is derived from mature classical literature. We use a boxplot to check the data for outliers and remove them if there are, for example, values with more than 40 years of service. However, there were no outliers in our questionnaire.

We also analyze the maximum, minimum, mean, standard deviation, skewness and kurtosis of the main scale variables. Through these indicators, we can grasp the overall data distribution. For example, based on skewness and kurtosis, we can determine whether a variable obeys a normal distribution. If the skewness approaches 0 and the kurtosis approaches 3, we consider the variable to be close to a normal distribution.

In addition, we use histograms and normal quantiles to test the normality of the dependent variable itself and its common mathematical transformations.

4. Results

In order to test the effect of enterprise strategic operation management level (SOM) on enterprise digital marketing model innovation (DMI), a multi-class variable logit regression model was used. Because the dependent variable is a multi-class sequential variable. According to the test results, the coefficient of SOM is 2.051 and the P value is 0.000, which indicates that SOM has a significant positive influence on DMI at the level of 1%, and hypothesis 1 is verified.

According to the regression results, the coefficient of SOM is 1.151, the P value is 0.000, and the coefficient of the interaction term SOM*BM is 0.227, and the P value is 0.000, which indicates that BM positively regulates the influence of SOM on DMI. Enterprise business model (BM) increases the effect of enterprise strategic operation management (SOM) on enterprise marketing model innovation (DMI). Hypothesis 2 is confirmed.

According to the regression results, the coefficient of SOM is 0.862, P value is 0.000, and the coefficient of the interaction term SOM*EC is 0.212, P value is 0.000, which indicates that EC positively regulates the influence of SOM on DMI. Enterprise e-commerce technology (EC) enhances the effect of enterprise strategy operation management (SOM) on enterprise digital marketing model innovation (DMI). Hypothesis 3 is confirmed.

5. Discussion

5.1 The role of intermediary variables played by e-commerce technology shows an obvious trend

From the global retail e-commerce sales scale trend data analysis, from 2016 to 2022 showed a straight upward trend, although other industries suffered the impact and challenges brought by the global novel coronavirus outbreak, e-commerce has experienced tremendous growth and transformation. The global retail e-commerce scale will maintain rapid growth and is expected to reach \$6.542 trillion in 2023. In the past decade, China's online retail sales have increased by nine times. Therefore, it is not surprising that Xiaomi was able to sell 17 billion yuan on Chinese e-commerce shopping festival Double 11.

5.2 The adjustment function of the industry in which the enterprise is located as a variable should not be underestimated

The development of the digital economy cannot be separated from the integration with the real economy. Different industries of enterprises will affect the effect of operation management on the introduction, application and innovation of digital marketing models, and the common thing is that they need to change from traditional marketing models to digital marketing models, but different industries, business models will also be different. At the beginning of its establishment, Xiaomi designed its business model according to the online store model.

6. Conclusion

6.1 Improve the level of strategic operation management of enterprises and promote the introduction of digital marketing models of enterprises

To improve the level of enterprise strategic operation management, we can effectively combine marketing management with manufacturing management and operation management, and play the advantages of system integration, of which marketing management is the key! The construction of digital marketing model should bear the brunt of customer management. The premise of customer management is to identify and find target customers. Reflected in the strategic level, customer positioning to be clear. Digital marketing needs to first determine who the customer is to serve and realize the sale. The end consumer or the middleman. Digital marketing first needs to determine who the customer is to serve, whether to choose the end consumer to achieve sales or middlemen. For example, the e-commerce located in the fresh industry can be divided into comprehensive e-commerce serving end consumers, such as Pinduoduo, Jingdong fresh etc.

6.2 Scientific design of enterprise business model and promote the application of enterprise digital marketing model

Enterprises should seize the development opportunities in the era of digital economy, scientifically design business models, and promote the application of digital marketing models. There are three main types of digital business models: B2B, B2C and C2C. For the service enterprises studied in this paper, adopting B2C model is easier to promote the application of digital marketing model. B2C is a mode in which enterprises conduct business activities directly to consumers. It is based on direct-to-customer retail business and mainly carries out online sales activities through the Internet, so it is also known as e-retail (electronic sales) or network sales. For example, Jingdong, Suning Shopping, Tmall

and other e-commerce platforms are B2C e-commerce models. This study suggests combining the integrated B2C model with the vertical B2C model to exert their own brand influence, actively seek new profit points, and cultivate the core business.

6.3 Appropriate application of enterprise e-commerce technology to promote digital marketing model innovation

Big data, cloud computing, VR, OTT, portrait, semantic analysis, audio recognition, intelligent customer service and other technology development in the application of enterprise e-commerce business has gradually become the mainstream, but for the service industry enterprises, should choose the right combination of technologies for application, and even use private computing, meta-universe, virtual people and other cutting-edge technologies. Digital marketing contains a technical core, which can achieve deep user insight, marketing precision and quantifiable effect, and achieve the goal of predictable, traceable, evaluable and optimized quality efficiency budget through more timely, more accurate, more relevant and more multidimensional data governance. The application of e-commerce technology, in turn, promotes the continuous innovation of the digital marketing model of technology and application integration.

7. Implications and limitations of the research

From the aspects of enterprise strategic operation management level, business model design and e-commerce technology application, this study puts forward the problems and countermeasures of enterprise digital marketing model from introduction, application to innovation. However, because the digital economy is still developing, each market region and enterprise development has its own particularities, so the research in the application level, but also need to be updated and adapted to local conditions.

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