Research on the Brand Promotion Design of Small and Medium-Sized Enterprises in the Era of Internet Big Data——Take Decoration Design Enterprises as an Example

Tingting Tang, Dun Zhao, and Ling Lin[✉]

Department of Design, JXUFE, Nanchang, Jiangxi, China
648038496@qq.com

Abstract. Purpose: Relying on the Internet platform and using big data technology, small and medium-sized enterprises (SMEs) are encouraged to establish a new corporate brand operation model from the perspective of brand positioning, brand design, and brand promotion, so as to improve the effect of corporate brand promotion in the era of big data. Methods: In combination with the characteristics of big data, the thinking changes brought by the Internet and big data for the brand promotion of small and medium-sized enterprises were analyzed. Taking decoration design enterprises as an example, specific solutions were proposed for their deficiencies in the environment of the Internet and big data. Conclusion: In the Internet era, using the advantages of digital technology to enhance corporate brand value is an effective means for SMEs to cultivate their core competitiveness. Only when SMEs establish big data brand promotion idea and "people-oriented" service concept, to break through the corporate branding design present situation, establish a good brand image in the consumer cognition.

Keywords: Internet · Big data · Small and medium-sized enterprises · Brand promotion · Brand database

1 Introduction

Driven by information technology, the scale and types of people's daily behavior data are increasing. Traditional data analysis tools have been unable to capture, manage, and analyze massive amounts of data. Nowadays, big data technology is widely used in the business field, and it has great technical advantages for corporate branding, product development, and consumer research. As the most important form of enterprise organization in the market, small and medium-sized enterprises can effectively promote the growth of GDP, but most of them have problems such as small scale, lack of funds, and lack of obvious competitive advantages. With the advent of COVID-19, the survival and development of small and medium-sized enterprises are more difficult. Effective brand promotion has become an important measure to promote the development of small and medium-sized enterprises and enhance their competitive advantages. Therefore, it is of great significance to study the role and specific operation mechanism of the Internet and big data on the brand design and promotion of small and medium-sized enterprises.

2 The Characteristics of Big Data and the New Thinking of Brand Promotion Caused by It

2.1 Features of Big Data

With the progress of computer technology, big data is widely used. The concept of big data was first formally proposed in A Handler for Big Data published in the journal *Science* in 1998. It is mainly to acquire, store, manage and analyze a large amount of data in a certain period of time, so as to mine the value and law in the data. *In the Age of Big Data*, written by Victor Meyer-Schonberg and Kenneth Cukier, big data is defined as data sets characterized by Volume, Variety, Velocity and Value [1].

Big data is mainly based on the Internet platform generated and used data types. The world's 3.8 billion Internet users provide a solid foundation for data collection, and everything people do online generates huge amounts of unstructured data. According to the logical relationship between data, big data can find the potential correlation between data and results from the weak correlation of data, so as to achieve the purpose of big data prediction. Digital technology is changing the way we live our daily lives and driving the development of the business filed. In the Internet big data environment, the brand promotion of small and medium-sized enterprises needs to analyze the behavior characteristics of consumers with the help of data, find the business picture from the data, and create a new enterprise brand operation mode, so as to improve the effect of brand promotion of small and medium-sized enterprises in the era of big data.

2.2 New Thinking of Brand Promotion Design of Small and Medium-Sized Enterprises in the Era of Internet Big Data

1) Grasp the implicit and explicit data, brand promotion more accurate and effective
a) To achieve precise positioning of consumption targets.

The traditional brand promotion methods of small and medium-sized enterprises mainly focus on the enterprise website, advertising, promotion and other ways. The data obtained from these channels are all explicit data, and the judgment of consumer groups has fuzziness and lag. In the big data environment, enterprise brand promotion not only needs to obtain the basic explicit data, but also needs to obtain the implicit data of product extension. Big data technology is based on the Internet, new media and other platforms to realize the recording, tracking, extension, and mining of consumer behavior data, thereby obtaining massive amounts of hidden data, predicting and analyzing consumer behavior, and then push the information that consumers may need, so that SMEs can more accurately locate the target consumers of the brand in real time.

b) Accurate Evaluation of Brand Promotion Effect.

John Wanamaker, the father of the department store, once said, "Half of my advertising money is wasted, and I don't know which half" [2]. At that time, it was difficult to find the root cause of problems in the process of brand promotion. Today, data collection and mining can be used to calculate the contribution rate of different promotion channels. For small and medium-sized enterprises, technology has not only improved

the efficiency of brand marketing, but also greatly reduced the ineffective cost of blind marketing investment.

2) The Internet and big data are reshaping the relationship between brands and consumers

In the Internet era, the prominent change of enterprise brand promotion is to attach importance to consumer behavior data and put consumer needs in the first place. Traditional enterprise operation mode also takes "customer is god" as the purpose of service, but it can not meet the personalized needs of customers in many aspects. The deep integration of technology and brand promotion provides greater value for consumers and enterprises. On the one hand, consumers can interact with enterprises through the Internet platform and make suggestions to enterprises. Enterprises can listen to the voice of consumers, so as to establish the most direct communication channel with target consumers. On the other hand, big data technology can provide corresponding services according to the personalized needs of target consumers, disseminate personalized information, improve consumer experience, and improve enterprise brand loyalty.

3) Replace "IDEA-DRiven" with "Data-driven"

With the development of Internet technology, the awareness of enterprise brand promotion relying on big data analysis is increasingly strengthened. The brand promotion concept based on "data-driven" instead of "creative driven" has gradually formed. In order to attract the interest of target consumer groups, small and medium-sized enterprises will pay more attention to the creative form and content of brand promotion. However, this traditional way of brand promotion can neither accurately and effectively reflect the market changes, nor timely predict the trend of new consumption trends. An accurate grasp of the market and consumers through big data can help enterprises measure the market potential and master customers' feedback on brands, so as to promote enterprises to develop the market scientifically and reasonably and realize the effective allocation of resources.

3   Deficiencies of Brand Promotion Design of Small and Medium-Sized Decorative Design Enterprises in the Internet Big Data Environment

Decoration design enterprises belong to an important part of architectural design, which integrates interior decoration design, project management and material distribution, aiming to create a reasonable, comfortable and beautiful indoor environment for consumers. With the continuous pursuit of living environment quality, the number of small and medium-sized decorative design enterprises is gradually increasing, which intensifies the market competition among these enterprises. Enterprise brand promotion is one of the most direct and effective ways for smes to establish brand image, expand market share and enhance enterprise competitiveness. However, Internet platform and big data technology still have application obstacles for some small and medium-sized enterprises. This article conducts a specific research on the brand promotion of decorative design SMEs.

3.1 Weak Awareness of Brand Design

The number of decoration design enterprises is gradually increasing, but it is difficult to occupy a large market share, the speed of enterprise scale expansion is slow, and consumer loyalty is low. Investigate the reason, even if is engaged in the design of enterprises, but for the corporate brand image design is still lack of recognition. Many SMEs brand design forms are still based on two-dimensional, static graphic design, and only use text and pictures to show the brand name, corporate philosophy, business scope, etc. Consumers can only experience visually, and it is difficult for companies to understand consumer needs in reverse. With the intensification of brand competition in the market, many consumers are drifting away from the mediocre and boring brand design image, and the corporate brand is gradually declining.

3.2 Single Brand Promotion Channel

At present, most decorative design SMEs are still in the traditional brand promotion mode. First of all, they place too much emphasis on transaction volume. By launching short-term brand promotion activities to launch a "price war" promotion model, attract the attention of consumers and expand the appeal of the brand. In the long run, the enterprise is easy to fall into a passive, will also cause malicious competition among peers, leading to the depreciation of enterprise brand value. Secondly, decorative design SMEs are still limited to their official website for one-way brand promotion, and rarely use other online channels, which will cause little effect of corporate brand promotion. The current brand promotion model of decorative design SMEs cannot meet the needs of their own business development.

3.3 Brand Positioning is not Clear Enough

Brand positioning is the foundation and key of enterprise creation. Only a clear brand positioning can create a strong brand image. For example, Wong Lo Kat, based on its own characteristics, created the brand positioning of "Drink Wong Lo Kat if you are afraid of getting angry", thus filling the gaps in the beverage market. Therefore, brand positioning is based on consumer cognition, giving a corporate brand a differentiation from its competitors, and prompting consumers to have a preference for this uniqueness in order to show the unique value of the brand. However, the brand positioning of some small and medium-sized decorative design enterprises has strong fuzziness. They pay too much attention to the brand building of competitors and ignore the positioning and analysis of their target consumer groups, leading to the reduction of consumers' attention to the enterprise brand, and gradually reduce the trust and identity of the enterprise brand.

3.4 Lack of Marketing Talent to Use Big Data Technology

The Internet and big data have now become a popular concept in the field of economic development. Big data adopts more convenient and cheaper technology to achieve the purpose of data collection, calculation and analysis, which is more suitable for small and medium-sized enterprises to choose [3]. Making full use of Internet platform and big

data technology has become a new development path for small and medium-sized enterprises. Most managers of decorative design SMEs in the market still do not realize the importance of big data technology, and believe that big data is only the icing on the cake, not indispensable. As a result, these companies have little knowledge of their internal and external environments, competitors' conditions, market changes, so the efficiency of brand promotion is half the effort. In addition, although big data technology can bring a lot of convenience for brand promotion, the specific principles and operation methods of big data are difficult to understand except for professionals, enterprise managers and the general public. Big data brand marketing requires not only computer technology, statistical knowledge, advanced mathematical calculations, but also professional knowledge of brand marketing. Therefore, technical talents have become a key element for SMEs to achieve core competitiveness and achieve continuous development.

4   The Innovation Path of Brand Promotion and Design of Decoration Design Small and Medium-Sized Enterprises in the Era of Internet and Big Data

4.1   Open Up Data Channels, Realize Network Collaboration, and Build a Precise Brand Promotion Model

1) Strengthen the construction of brand database
For small and medium-sized enterprises, to realize the effective promotion of brand, not only needs the boost of external institutional environment, but also needs the strengthening of enterprise internal construction [4]. Brand database construction is the key path to improve the brand promotion of small and medium-sized enterprises under the background of big data (Fig. 1).

a) Sample data collection and storage.

The sample data of the brand database can use the Internet platform to collect consumer behavior data, competitor data, and brand market feedback data. According to their own characteristics and brand development needs, enterprises divide the data categories into structured data and unstructured data. Among them, improving the ability to collect and store consumer unstructured data is the primary problem for SMEs to build brand databases. On the basis of the explicit data obtained by big data technology, the implicit data outside the brand can be automatically tracked and recorded, so as to achieve an immediate and comprehensive understanding of the target consumers. After data processing and analysis, a three-dimensional portrait of brand users can be constructed.

b) Sample data processing and analysis.

To apply big data technology to the brand promotion of small and medium-sized enterprises, we should not only collect a large amount of data information, but also have the ability of intelligent data processing and analysis. First of all, the big data technology is used to clean, summarize and modify the data set to avoid duplication and useless information, form data sets and timely data correction, and screen out reliable data samples. Secondly, rely on data mining, data statistics, intelligent algorithms and

other methods to obtain unstructured data to strengthen the accuracy and completeness of the internal database of the enterprise, and provide technical support such as decision-making basis and information prediction for brand promotion of small and medium-sized enterprises.

   c) Data update and maintenance.

   Brand database construction is not once and for all, the enterprise needs to maintain and update the data. First of all, according to market changes and enterprise development needs, the data content should be supplemented and adjusted in time to ensure that the data has sufficient effectiveness and novelty. Secondly, the use of professional technology to regularly maintain the running status of the database, diagnosis and analysis of the potential security risks, and timely solve the problems, to promote the database platform can operate in a long-term and stable manner.

2) Based on the application of big data, precise positioning of enterprise brand is realized

Brand positioning refers to the definition of an enterprise's research and development direction, facing the target consumer groups and market areas. It is mainly summarized in two aspects, namely brand positioning and target consumer positioning. For decorative design SMEs, it is particularly important for brand promotion to create brand differentiation and strictly clarify its role in the market. Secondly, only when companies clearly target consumer groups can they carry out brand promotion in a more targeted manner. Brand positioning is an arduous and time-consuming task in traditional brand management. It requires enterprise managers to have keen market judgment and rich market experience. Based on the technology of data mining and analysis, grasps the different target audience on the attributes of the brand preference, fully understand the demand of user groups, to help enterprises to quickly find the key factor driving the market brand, advantages and disadvantages in judge enterprise brand in the market competition, for small and medium-sized enterprises provide data support for accurate brand positioning.

3) Online and offline linkage, broaden brand promotion channels

In order to quickly occupy the dominant position in the cognition of consumers and have influence in the market competition, it is essential for small and medium-sized decorative design enterprises to effectively expand the brand promotion channels. First, expand the Internet platform. Attract the attention of consumers through diversified and interesting promotion methods, and push quality information and services. In addition to the traditional official website and search engine promotion, it also needs to rely on some portal sites with large user base (such as: Yahoo, Sina, etc.). At the same time, small and medium-sized enterprises can develop relevant apps according to the differences of their own brands to strengthen the interaction between enterprises and consumers. Secondly, carry out offline promotion activities. It solves the problem of distance and trust of online promotion, so that consumers can feel the practical experience. Offline promotion activities can attract consumers in a short period of time, and then gradually transfer the traffic from offline to online through media publicity, forming a good linkage mechanism, so as to improve the brand promotion effect.
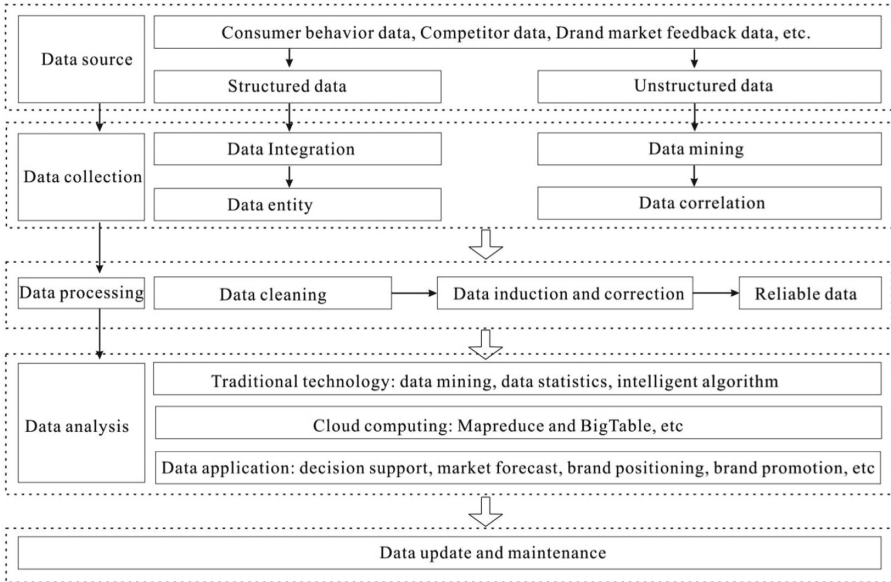
Fig. 1. Enterprise brand data construction

4.2   Strengthen the "USER EXPErience" of Brand Design and Improve the Effect of Brand Promotion

1) Emotional interaction

Relying on the non-spatial characteristics of the Internet platform, big data technology helps enterprises close the relationship with consumers. The traditional brand image is promoted in a one-way communication, and consumers also accept it in a passive way. In an era of more diversified consumption concepts, consumers' choice of products is greatly influenced by their consumption values. Based on Maslow's demand theory, consumers' demands are no longer satisfied with a single use function and quality guarantee, but pay more attention to their internal culture and value, in order to pursue a higher level of psychological satisfaction (As shown in Fig. 2). Therefore, the contemporary enterprise brand image design in pay attention to personality at the same time, must always put the needs of users in the first place. The real-time dynamics of brand users are mastered through big data technology, the individual behaviors and preferences of consumers are processed by data, and the needs of users are fully understood, and corresponding services are provided to form emotional interaction with consumers, so as to increase the brand value and impress consumers.

2) Visual diversity

The complexity of human vision is directly related to psychological comfort [5]. Before buying a product, consumers will first choose a product with "eye edge" based on the judgment of visual elements. The brand image design of most SMEs is mainly based on the designer's subjective consciousness and lacks objectivity. Therefore, the
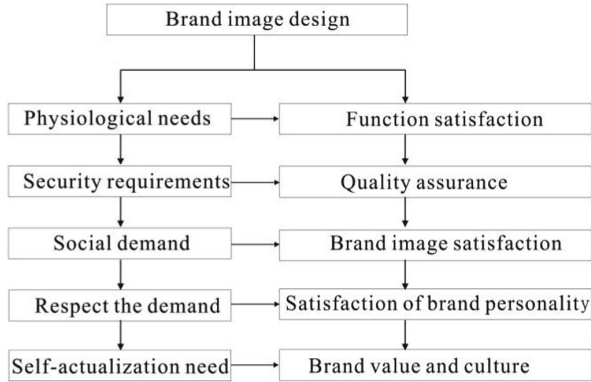
Fig. 2. Maslow needs of brand design

introduction of data technology into corporate brand image design is an inevitable trend. The Internet platform should be used to strengthen market research, understand the preferences and needs of target consumers, and solicit public opinions on brand building. Through the analysis of big data technology, the brand auxiliary design database is established, including color database, text database, graphic design database, etc., so as to realize the digitalization and informatization of enterprise brand design and improve the design effect. Society has entered the era of visual culture, computer technology to promote the development of corporate brand design, with artistic means to show the corporate brand image, eager to create an incomparable experience for consumers in the visual experience.

3) Intelligence of experience
In the Internet era, the decisive factor for the success of enterprise brand promotion lies in the user experience of consumers. The brand promotion media of small and medium-sized enterprises are mainly traditional ways such as official website, wechat push and magazines. The development of Internet technology enables consumers to realize online virtual experience, allowing them to get rid of the oppressive feeling of plane space and feel the three-dimensional sense of the three-dimensional world. In particular, decoration and design enterprises can use computer technology to make three-dimensional models of design renderings, and users can freely operate and place interior decorations in the virtual world, which is conducive to consumers to feel the design effect more intuitively, and designers can also understand customer needs in the virtual world and discover design deficiencies. In such a virtual environment, not only has the relationship between consumers and the company been brought closer, but it has also deepened consumers' cognition of the company's image.

4.3   Build the Brand Data Promotion Guarantee System

1) Establish the concept of big data brand promotion
Ideas are a prerequisite for action. The brand promotion of decorative design SMEs

has to go through a number of complicated procedures, involving various data such as market research, design research and development, transaction communication, user feedback and so on. Therefore, corporate brand management based on "data promotion" has gradually received attention. However, many managers of small and medium-sized enterprises are more inclined to rough subjective judgments and lack the understanding of the use of big data. In the Internet age, SMEs need to establish the concept of big data brand promotion and thoroughly implement the big data concept to every step of brand management. Big data technology is used to provide timely data feedback to the market, industry and competitors, which brings new changes in data collection and analysis technology as well as brand promotion thinking and way for smes.

2) Cultivate a talent for big data brand promotion

From the perspective of the development status of SMEs, if brand promotion wants to use big data technology, it must train big data brand promotion talents and professional data analysts. Small and medium-sized enterprises can adopt a talent training model that focuses on internal training and supplemented by external alliances. On the one hand, we should develop long-term employee training plans to train employees in big data theory and application skills, and combine our own brand promotion experience and advantages, so as to cultivate talents who understand both big data technology and brand marketing. On the other hand, small and medium-sized enterprises set up the concept of external talent introduction, and pass their own enterprise planning, employment needs and standards to universities or the society, so as to cultivate or explore the potential talents needed and make up for the defects of the existing personnel structure in time.

3) Strengthen data usage norms and protect data privacy

Data use anomie and data privacy leakage are two major problems in the era of big data. Without the consent of consumers, big data technology is used to collect and listen to all their online behaviors. In this process, privacy leakage is caused, which leads to consumers' distrust of the enterprise brand and lowers brand loyalty. Therefore, when using big data technology, small and medium-sized enterprises should strengthen data application norms and protect data privacy. First of all, when consumer behavior data is collected, their personal privacy data, such as name, unit, should be automatically hidden. Secondly, strengthen the firewall encryption software in technology to prevent data from being stolen. Finally, for internal personnel, relevant laws and regulations and internal punishments should be adopted to regulate employee behavior, so as to prevent consumers' personal data from being sold as products. The formation of data protection awareness is not only the business ethics that all enterprises should have, but also the premise of using big data technology, and an effective way to prevent brand public opinion crisis.

5   Conclusion

Big data technology provides scientific basis for the study of "reverse marketing", fundamentally changes the traditional brand promotion model, and creates the possibility for the reverse attack of small and medium-sized enterprises. This article takes decoration design small and medium-sized enterprises as an example, according to their

development disadvantages in the Internet and big data environment. It mainly optimizes brand marketing strategies from three aspects: establishing a brand database, strengthening brand design "user experience", and establishing a brand data promotion guarantee system to promote the comprehensive and sustainable development of small and medium-sized enterprises.

Appendix

In the Age of Big Data, written by Victor Meyer-Schonberg and Kenneth Cukier, big data is defined as data sets characterized by Volume, Variety, Velocity and Value [1].

John Wanamaker, the father of the department store, once said, "Half of my advertising money is wasted, and I don't know which half" [2].

Big data adopts more convenient and cheaper technology to achieve the purpose of data collection, calculation and analysis, which is more suitable for small and medium-sized enterprises to choose [3].

For small and medium-sized enterprises, to realize the effective promotion of brand, not only needs the boost of external institutional environment, but also needs the strengthening of enterprise internal construction [4].

The complexity of human vision is directly related to psychological comfort [5].

References

1. V. Meyer-Schonberg and K. Cukier, Translated by Y. Y. Sheng and T. Zhou, "Big Data Era", Hangzhou: Zhejiang People's Publishing House, 2013.
2. W. J. Shang, "The development and change of brand promotion in Internet era", Knowledge Economy, pp. 67–69, August 2016.
3. N. Ni, "Big Data Marketing", 1rd ed. Beijing: People's Publishing House, March 2015.
4. Z. H. Zeng, "Brand management in the perspective of big data communication", 1rd ed. Beijing: China Social Sciences Press, September 2019.
5. Y. Ma and Y. D. Hu, "Research on the characteristics of brand design and promotion under the Background of Internet", Packaging Engineering, pp. 17–20, October 2016.