A Study on the Development Trend of Modern Print Advertisement Art Based on New Media

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Abstract

The rapid progress of network information technology has promoted the construction and progress of a modern intelligent society and fully transformed people’s life style. Intelligent mobile devices that rely on network technology have become an indispensable tool in contemporary life. In this context, the emergence of new media brings more convenience, accelerates the transmission speed among information and expands the channels of information dissemination. Besides, new development opportunities are brought to the industry, but the traditional media suffers from a serious impact. Traditional media represented by newspaper, radio and television is gradually superseded by mobile phone, digital TV, IPAD and other new media. In the meanwhile, as far as the modern print advertising art is concerned, new media has clearly demonstrated the future development path and the mainstream direction, but also provided a comprehensive and innovative technical support. To this purpose, based on the new media age, this paper first explains the research background and research objectives, respectively elaborates the new media era and the current print advertising, focuses on the development environment and the communication characteristics of the current print advertising and analyzes its future development trend. Based on this, in order to further promote the development process of the print advertising art in the new media era, an evaluation model for advertising effect is constructed on basis of the consumer psychology structure. Specific structure equations and evaluation methods are applied to comprehensively analyze the advertising effect and to provide a more favorable reference on the print advertising art, so as to implement a study on the development trend of the modern print advertising art under the background of new media and to speed up the core purpose of its development process.

Keywords: New Media, Print Advertising, Development Trend, Evaluation Model.

1. RESEARCH BACKGROUND AND OBJECTIVE

1.1 Research Background

At present, China’s government departments have vigorously promoted the development of a comprehensive Internet and mobile communication network and have brought unlimited power and space for the development of new media and modern print advertising. The government supports the major network operators to speed up their own network construction. In recent years, the average network access rate of China’s broadband users has ascended from the previous year’s 3M/S to the current 15M/S to 25M/S, and the overall Internet speed has demonstrated a doubling trend (Liu, 2014). Especially during the Spring Festival in 2015, China’s engineering information technology sector has formally issued the authorized mobile 4G network operating license to China Unicom and China Telecom, after China Mobile gained its approval. Three network communication companies have launched a new network operating model, which also means that China’s communication network will formally enter the ear of 4G. The continuously improved speed of broadband Internet and communication network reflects the rapid progress of China’s network technology. To this end, new media dependent on the Internet will have greater development potentials and a larger market in the future (Li, 2014). As far as new media and print advertising are concerned, when these two keywords are input on the Baidu search platform at the same time, 26,740,000 results will appear, which can fully indicate that the modern print advertising art in the new media has attracted wide attention from a number of social researchers.

The continuous advancement of the society has promoted the overall economic level. When people’s material
conditions are met, their spending power and spiritual needs will be enhanced at the same time. Advertising is an effective way to arouse people’s desire to consume and an indispensable component in the development of all areas. Excellent advertising should not only combine the current social development situation and keep pace with it, but also consider the public’s aesthetic concepts and reflect unique and impressive creativity on basis of displaying significant information (Du, 2014). The integration of modern print advertising and new media can effectively break the transmission model of the traditional print advertising, expand advertising channels and produce more advanced design means and richer content, which builds on human needs and demonstrates stronger interactive and evident personalized features. For this purpose, in view of the new media era, this paper explores the development trend of the modern print advertising art and fully comprehends its future direction. It is important to be able to identify the current deficiencies, thus truly making the development trend possible and come true in the near future.

1.2 Research Objective

Since the emergence of new media, its rapid development speed is unprecedented. Especially in the current backward development of the traditional media, new media relies on the advanced network technology and the extensive application of intelligent mobile devices and becomes a dark horse with substantial potentials in the Internet era (Che, 2013). At the same time, the rapid development for modern print advertising art also has brought a broad development prospect, expanded the market space and provided a new platform. New media advances at a rate beyond imagination and receives high attention and a series of research from experts and scholars in various fields. However, because new media and the brand-new print advertising that is reformed based on new media are in the growth stage, technology upgrades are surprising in most cases (Wang, 2014). In other words, the new media era is constantly changing, so the future development trend of the new media print advertising is unknown. Only with a comprehensive and in-depth analysis on the new media era as well as the features, content and other aspects of the new print advertising, can the future development trend of the new media print advertising be analyzed and summarized, and can the existing deficiencies of the relevant aspects in the current period be better improved, so as to ensure that the development trend becomes an objective reality as soon as possible.

2. AN OVERVIEW OF NEW MEDIA AND PRINT ADVERTISING IN ITS ERA

2.1 Overview of New Media

At the end of the twentieth century, the Secretary-General of the United Nations, Annan, proposed new directives through the UN Committee meeting. In the process of strengthening the transmission model of traditional texts and sound images, the most advanced fourth-generation media network is fully applied. Since then, the definition of the fourth-generation media has been widely used in succession (He, 2017). The fourth-generation media mainly include two aspects. One aspect involves the digitization of the traditional media. Alternatively, the traditional media are promoted to expand and approach towards the digital and intelligent direction, and a brand new form of media communication is generated, such as e-version of the traditional newspaper. The second aspect is to apply the advantages of the network to provide abundant convenience and to promote the emergence of a new generation of media, such as Sina microblogging. The relevant intelligent mobile devices belong to the fifth generation of media. Table 1 concludes the characteristics and the types of these different media.

<table>
<thead>
<tr>
<th>media type</th>
<th>Media features</th>
<th>Media carrier</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>One generation media</td>
<td>Print media, paper, ink and so on</td>
<td>Newspapers, magazines, books, posters, brochures</td>
<td>Traditional media</td>
</tr>
<tr>
<td>Two generation media</td>
<td>Analog audio signal, radio terminal</td>
<td>Broadcasting, radio, radio</td>
<td></td>
</tr>
<tr>
<td>Three generation media</td>
<td>Analogue image signal of TV terminal</td>
<td>HDTV, TV</td>
<td></td>
</tr>
<tr>
<td>Four generation media</td>
<td>Traditional media network development</td>
<td>Digital film.</td>
<td>new media</td>
</tr>
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It is fully indicated that interactive media are also a new medium. Besides, the scope of new media includes network media, digital TV, mobile terminal networks and various types of intelligent mobile electronic devices. There are other types of non-interactive media, such as digital radio and car TV (Li, 2017). Therefore, the main feature of the current new media is the interaction habit.

2.2 An Overview of New Media Print Advertising

The academic research of the major of advertising design in Texas colleges and universities in the United States has already created the concept of new advertising in the 1990s, which indicates that the future economic market and the media sector would experience a major transformation, and advertising should not be limited to the previous definitions. “From the perspective of business, advertising is the exchange of information between two sides. The seller applies mass media, personalized media or digital media to make information interaction with the buyer” (Liu, 2012).

2.2.1 Development Environment

The reason why the modern print advertising art under the new media era is advancing rapidly is mainly due to a benign social environment, which includes the government system environment and, more importantly, the growing social and economic environment. Reasons mainly refer to a country’s economic system, economic structure, industrial distribution, resource advantages, comprehensive economic strength and future economic development trends. In terms of the socio-economic environment, the reasons involve GDP-related changes and development situation, the proportion of profit margins, market inflation and trends, the proportion of laid-off, the public free income, exchange rate trend, energy expenditure costs, a sound effect of the market system and the actual market demand, as illustrated in Figure 1 and Figure 2.

![Figure 1. 2013---2018 Domestic Online Advertising Market Size and Forecast](image)
The survey data in Fig. 1 and Fig. 2 are from the scale statistic diagram and the forecast chart of China’s online advertising market between 2013 and 2018 published by Iresearch website. As clearly indicated by the specific data in the column statistics table, the development scale of online advertising in the market has showed a rising trend from the year of 2013 to 2015. (Liu, 2015). Meanwhile, the next year will still witness such a stably expanding development state, which indicates that the modern print advertising design in the new media era has a benign socio-economic environment and is provided with a more favorable market system and conditions. It is precisely because of such a favorable development momentum of the economic environment that the solid foundation and continuous progress of the new media advertising market can be guaranteed.

2.2.2 Communication Features

The emergence of new media with significant features of interaction not only transforms the one-directional transmission mode of the traditional print advertising, but also builds on a two-way information interaction of mass communication, summarizes the information function of symbols, divides the actual needs of information content, gives play to an interactive two-way communication channel characteristics, and sends information needed by relevant users according to different types (Shen, 2016). Therefore, the transmission route of new media is not as linear as that of the previous print media, and the transmission of effective media is diversified. The traditional print media, such as newspapers and magazines, publish and deliver information to the public in a monotonous way. New media can send information to different audience and provide customized services of personalized information for specific users. The application of new media technology transforms the traditional mode of transmission and develops toward the direction of interpersonal communication. In the process of more copy and more efficient transmission by virtue of new media tools, more attention is attached to the multi-directional mode of interpersonal relationship so as to realize more extensive mixed-mode information communication. Interpersonal communication centers on the actual needs of the public, focuses on interaction, and fully demonstrates its own characteristics of each new medium in a competitive environment (Wan, 2017). Figure 3 displays the communication characteristics of the print advertising in the new media era.

Figure 2. 2016 China Online Advertising Market Media Revenue Size Estimates

Figure 3. Sketch Map of Advertisement Features of New Media
2.3 An Analysis on Development Trend

The above-mentioned evaluations are carried out on the current social development situation, the overview of new media, the general description of the modern print advertising in the new media environment, the communication characteristics of the current new media, the development of the print advertising and the market size of the future network. In the research literature that combines relevant effective data, the new media era and the development trend of the modern print advertising can be concluded (Liu, 2010).

First, the increment rate of the overall economic efficiency in the traditional print advertising has slowed down, showing a negative growth at some point. Print advertising in the new media era is gradually reused and applied, and the economic benefits of advertising are in constant rise. Under the vigorous promotion of the main advertising marketing model, its position in a variety of activities is increasingly prominent, and even scholars in various fields are fully confident of its development prospects. The advertising research institutes of media universities in China have conducted a detailed market research on the new media print advertising. Its survey data indicates that the average proportion of the visited advertising companies’ cost expenditure in new media to the overall media advertising cost has exceeded that of outdoor advertising, newspapers and other major media advertising. 65.8% of the surveyed companies declare that, in 2018, the proportion of new media costs in print advertising to all the advertising costs will continue to rise. (Qiu, 2009). When the new media gradually grows and matures, the delivery approach of print advertising demonstrates an increasingly obvious centralization trend and becomes a crucial choice target when advertisers release new media print advertising.

Secondly, with the continuous progress of advanced technology, the new media print advertising model will undergo a major change. The advent of the Internet+ era indicates that online advertising has entered a new stage of development. In this stage, advertising mainly adopts the streaming media as the main carrier with main features of audio, video and interactivity, which is called as rich media in foreign countries. The exact advertising positioning of streaming media can facilitate companies to master the user group, to understand users’ hours of use and the duration of use, to evaluate users’ most interested content and participation activities, thus forming a specific and effective program to attract more users to join (Li, 2015). Advertising acquisition technology is applied to more accurately divide the user group and the overall consumption situation. Meanwhile, users’ login, registration and other interactive behaviors are taken into account to reflect the significant symbol of the rich media advertising in the Internet+ era that the oriented and personalized advertising sends accurate advertising information. The sensational energy efficiency of rich media advertising requires key elements in three areas, including outstanding advertising design creativity, high-traffic pages and high participation. Figure 4 demonstrate the creative interactive new media print advertising.

![Figure 4](image)

**Figure 4.** The Creative Interactive New Media Print Advertising

3. A STUDY ON THE DEVELOPMENT OF MODERN PRINT ADVERTISING ART IN THE NEW MEDIA ERA

3.1 Evaluation Model for Advertising Effectiveness

Currently, new media print advertising lacks an effective system for evaluating advertising effectiveness, which is critical to the development of new media print advertising. Only with a full grasp of the advertising effectiveness, the reception in the society, the evaluation on the public and the related sales status of business-natured advertising products, can the design scheme and the future direction of the print new media advertising be truly clarified and can an important reference for its development be provided. To this end, this paper studies the related literature, builds on the formula theory of AIDA in the evaluation of advertising effect,
and constructs an evaluation model for the print advertisement effect under the new media era from the perspective of consumer psychology, as illustrated in Figure 5.

\[
\begin{bmatrix}
\alpha_1 \\
\alpha_2 \\
\alpha_3
\end{bmatrix} = \begin{bmatrix}
1 & 1 & 1 \\
\theta_{21} & 1 & 1 \\
\theta_{31} & \theta_{32} & 1
\end{bmatrix} \begin{bmatrix}
\varphi_1 \\
\varphi_2 \\
\varphi_3
\end{bmatrix} + \begin{bmatrix}
\lambda_1 \\
\lambda_2 \\
\lambda_3
\end{bmatrix}
\]

(1)

Specifically, the mathematical logical relationship of structural variables is \( \alpha = \beta + \delta + \mu \). In the advertising evaluation model, cognition, experience and attitude serve as intrinsic variables, thereby deriving the relationship between the advertising effect and the variables of the consumer psychological structure:

3.2 Model Structural Equation and Evaluation Method

In general, the models for structural equation mainly include the measurement equation, the structural equation and the model hypothesis. The external variables and the intrinsic variables generated in the causal model all are the potential values. In this case, there is a corresponding measurement equation and a structural equation between external variables and intrinsic variables:

\[
\begin{align*}
K &= \sum_k \mu_k + \lambda_k + \zeta_k \\
\Sigma &= \sum \theta_i + \zeta_i
\end{align*}
\]

Specifically, \( K \) is the \( N \times 1 \) vectors composed of \( N \) intrinsic variables; \( \Sigma \) is the \( M \times 1 \) vector composed of \( M \) intrinsic latent variables; \( \Sigma_k \) is the \( N \times M \) factor load matrix of \( K \) on \( N \); \( \lambda_k \) is the \( N \times 1 \) vectors composed of \( N \) measurement errors. \( G \) equation in the measurement equation is the measurement equation of the external variable; \( G \) is the \( E \times 1 \) vector composed of \( E \) external indexes; \( \theta \) is the \( F \times 1 \) vector composed of \( F \) external latent variables; \( \Sigma_\theta \) is the \( F \times E \) factor load matrix of \( G \) on \( F \); \( \zeta \) is the \( F \times 1 \) vector consisting of \( F \) measurement errors (Gao, 2015). In the structural equation, \( P \) is the \( M \times 1 \) coefficient matrix, which illustrates the interaction between the intrinsic latent variables. \( \rho \) is the coefficient matrix of \( M \times N \), indicating the effect of the external latent variable \( \theta \) on the intrinsic latent variable \( \Sigma \), and \( \delta \) is the residual difference vector of the \( M \times 1 \) vectors.

Therefore, the mathematical logical relationship of structural variables is \( \alpha = \beta + \delta + \mu \). In the advertising evaluation model, cognition, experience and attitude serve as intrinsic variables, thereby deriving the relationship between the advertising effect and the variables of the consumer psychological structure:

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\begin{align*}
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\end{bmatrix} \begin{bmatrix}
\varphi_1 \\
\varphi_2 \\
\varphi_3
\end{bmatrix} + \begin{bmatrix}
\lambda_1 \\
\lambda_2 \\
\lambda_3
\end{bmatrix}
\end{align*}
\]

Figure 5. Advertising Effectiveness Evaluation Model
\[ T = \Omega_T \alpha + \varepsilon \]

\[ H = \Omega_H \mu + 7 \quad (2) \]

Furthermore, in the evaluation of advertising effect based on consumer psychology, the relationship matrix of the corresponding structural variables and evaluation variables is:

\[
\begin{bmatrix}
 h_1 \\
 h_2 \\
 h_3
\end{bmatrix} = \begin{bmatrix}
 \beta_1 \\
 \beta_2 \\
 \beta_3
\end{bmatrix} \tau + \begin{bmatrix}
 \xi_1 \\
 \xi_2 \\
 \xi_3
\end{bmatrix} \quad & (3)
\]

Based on the above structure, the relationship between the variables is derived, and the final results are obtained through the specific operation method. This paper adopts the linear regression method and constructs the linear equation: \( K = n + mg \) according to the variable relation in the above equation. Corresponding to advertising cost \( G_k \), the actual sales quantity is \( K'_m \subset K'_n \), which has a certain degree of difference with the theoretical value, \( K \). The least squares method is applied to calculate the minimum gap value, and the values of \( n \) and \( m \) are further derived. The following is the specific algorithm:

\[
n = \frac{\sum k v - m \sum g v}{\alpha}
\]

\[
m = \frac{k \sum k_v f_v - k \sum f_v}{k \sum k_v - (\sum k_v)^2}
\quad (4)
\]

In accordance with the operation of the regression equation, the sales volume in the expenditure process of all the advertising costs are evaluated, and future sales and development are clarified.

4. CONCLUDING REMARKS

Under the new media age, the whole society has accelerated the development rhythm, and the fields have also been affected to varying degrees. Especially for the modern print advertising art, the advantages of the new media have effectively changed the transmission mode of the traditional media and promoted the two-way information communication, so that its interaction is more prominent and more emphasis is laid on the people-oriented development concept. But at the same time, in light of the current situation, the future development trend of print advertising design in the new media era can be concluded, which, in essence, is the extension and prediction on the development based on the status quo. Through an in-depth analysis, the advertising effectiveness evaluation model is applied to address the current problems, to provide more effective and valuable information for the development of new media print advertising, and to fully verify the specific results in order to better plan the development path and achieve the ideal goal.

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