

# Research on Advertising Value Evaluation of Internet Media

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**ABSTRACT:** In the 21th century, with the explosive progress of human civilization and technology, the importance of Internet technology and big data has become more and more prominent, and social media has gradually become an important part of people's life. Information flow advertising is another important advertisement form innovation and supplement, which brings users better experience and strong interactivity. Information flow advertising as a representative of the new advertising model has gradually become one of the mainstreams of the current advertising model. At present, because there is no perfect Internet media advertising value assessment system, lead to advertisers and media lacks scientific basis in the process of trading, the scientific method, and evaluation criteria, to fast, scientific and accurate judgment, decision on the marketing object, directly affect the project's execution and waste more resources. Therefore, it is particularly important to study the value evaluation of Internet media advertisements. This paper starts with tracing the source of social media and information flow advertising to explain its concept, characteristics and types. Based on the results of existing researchers, the value composition and evaluation methods of information flow advertising on the Internet are studied. Because of the particularity of information flow advertising value, and in reality, the specific valuation method of Internet information flow value has not been established. Therefore, this paper adopts CPM advertising bidding formula to calculate the evaluation value of information flow advertising on the Internet, and elaborates the process of calculating the value of Internet information flow advertising by using formula. This research method provides a way to correctly judge the value of information flow advertising on the Internet and enriches the theoretical system of value evaluation of information flow advertising on the Internet. At the same time, the viewpoints in this paper can also be used for reference to optimize the development strategies of other advertising types in Internet media, and provide a useful way of thinking for advertising evaluation in Internet media, which enriches the research of

information flow advertising to some extent.

**Keywords :**Feed ads on the Internet, Value evaluation of the feed ads, CPM bidding formula

## I. INTRODUCTION

Information flow advertising is an important advertising innovation in the Internet era of the 21st century. It comes from abroad, meanwhile, followed up quickly in China and applied to practical operation. At present, information flow advertising has been used widely in various online media and private social APP, such as Baidu, Google, Sina Weibo, Tencent, INS and all kinds of websites, all contain a wealth of Internet information flow advertising.

With the increasing demand for Internet information flow advertising business, it is particularly urgent to quickly and accurately evaluate the value of Internet information flow advertising. However, there is no perfect evaluation system and no advanced method to evaluate the value of Internet information flow advertising. This paper aims to enrich the research of value evaluation of information flow advertising.

The information flow advertisement of all kinds of platforms is constantly put in the user's browsing interface, which initially realizes the social value of the information flow advertisement to some extent, benefiting individuals and businesses, and promoting social development. However, as a new form of advertising, in the initial stage, whether in the theoretical system or in the practice, there are still many questions to be discussed in the value evaluation of the Internet information flow advertising. For example, how to evaluate the Internet information flow advertising, and how to improve the accuracy of value evaluation of the Internet information flow, and so on. It is very important, necessary and urgent to strengthen the research on these issues.

In the new era, Internet information flow advertising quickly occupies the advertising media market with its unique advantages, whether in China

or America, it has become an important part of the Internet advertising. This paper summarizes the existing achievements of other scholars and studies the relevant concepts, classification, development status and evaluation methods of Internet information flow advertising by using literature research method and case analysis method.

## II. LITERATURE REVIEW

### 2.1 Research Status Abroad

Internet information flow advertising started abroad, and it is also ahead of China in terms of technology and academic research. Rader E and Gray R (2015) <sup>[1]</sup> thought Internet information flow is to observe the network trajectory of a certain number of network users first, and then display (pop up) relevant content on the browsing page of users. Kevin Curran et al. (2011) <sup>[2]</sup> concluded that the interaction between the various users in the process of the transmission of Internet information flow advertising, has a positive effect on the value of the final Internet information flow advertising.

Qinwei et al. (2010) <sup>[3]</sup> proposed that the emotional expression of users of online social platforms is closely related to the relationship between users and the platform.

In addition to the above, Internet information flow advertising also has some shortcomings. One of the shortfalls is the serious problem of information leakage. Christopher M.Hoadley et al.(2010) **Error! Reference source not found.** have launched a new Internet information flow advertising push system to solve this problem. Among the research that pay attention to user privacy, Christopher M.Hoadley et al.mainly investigated the views of network users on the Internet information flow advertising on the web page and their corresponding countermeasures.

Although after decades of exploration, foreign scholars have achieved many significant and far-reaching results in the field of Internet information flow advertising. However, the research on the value evaluation of Internet information flow advertising is not as mature and complete as the research on the value evaluation of Internet advertising.

### 2.2 Domestic Research Status

Domestic research on Internet information flow advertising began later, and the research on Internet information flow advertising is still shallow. This paper summarizes relevant literature, and divides into the following four categories.

(1) The Development and Problems of Internet Information Flow Advertising

Zhang Chi, An Zhi(2017) <sup>[5]</sup> analyzed the following three aspects, including the reason of Internet information flow advertising rapid transmission, the uniqueness of Internet information flow advertising and the problems that still exist in information flow advertising. The four-driving force for the development of China's information flow advertising are as follows.(a) The development condition is mobile social media. (b)The development demand is continuous innovation and breakthrough.(c)The development basis is the recognition and input of advertisers. And(d) the technical premise is data and algorithm. And experience, content, evaluation, ethics have also become issues that need to be faced at present.

Song Renliang (2019) <sup>[6]</sup> explained the types and definitions of Internet information flow advertising and network platforms. In the article, Song Renliang also reflected many disadvantages of China's Internet information flow advertising, which is of great reference significance.

(2) Research on the Value of Internet Information Flow Advertising

With the increasing demand of the Internet information flow advertising and the continuous expansion of the market scale, many scholars began to pay attention to the value of Internet information flow. Most domestic scholars use case analysis to analyze the emerging information flow advertising platforms in China, such as WeChat, Weibo, Baidu and other exchange search platforms.

Most researchers take WeChat as an example to explore the value of Internet information flow. Han Jie (2015) **Error! Reference source not found.** discussed the question of "How to treat the WeChat Moment information flow advertising carefully" from two point, namely information flow advertising based on relationship chain , the relationship between WeChat Moment and information flow advertising. Han Jie believed that WeChat Moment connects the real world with the virtual world and eventually evolves into a combination of real-world Moment and WeChat Moment.

About the commercial marketing of the WeChat platform, Zhang Yan (2016) <sup>[8]</sup> thought WeChat proposed precision marketing, and carried out reasonable placement of Internet information flow advertisements, and finally gave full play to the advantages of the platform to successfully complete commercial marketing. She believed that the

successful marketing of WeChat is mainly related to WeChat's exposure strategy.

(3) Value Evaluation Method of Internet Information Flow

Based on domestic research literature, it is found that with the expansion of the Internet information flow advertising market, scholars have turned their attention to Internet information flow advertising value evaluation research, but in general, there are still relatively few researches on Internet information flow advertising value evaluation methods. Internet information flow advertising value evaluation methods can be summarized into the following two methods.

① The Income Method under the Expected Income Determined by the Gray Forecasting Model

Zhao Zhenyang, Tang Yan (2018)<sup>[10]</sup> believed that Internet information flow advertising lacks comparable factors when selecting references, and it is almost impossible to find the same or similar comparison cases, and the input capital and output value of Internet information flow advertising have little correlation, therefore, limits the use of the cost method to assess the value of Internet information flow advertising. In view of this, three evaluation methods are put proposed: income method, market method and cost method. It is believed that the income method is more suitable for evaluating the value of Internet information flow advertising. Income method to evaluate the value of Internet media advertising includes the following steps. Firstly, use the gray forecasting model to roughly calculate the revenue of Internet media advertising, focusing on the accuracy test. Secondly, according to the amount of revenue that has been obtained and the principle of process utility theory, form a whole framework for the value evaluation of Internet media advertising. Thirdly, obtain the adjustment factor of the result through the fuzzy evaluation method, adjust the amount of revenue that has been obtained, so as to obtain a more accurate amount of revenue. Finally, through a reasonable estimation of the income period and discount rate, the estimated value of Internet media advertising is finally obtained. Because Internet information flow advertisement belongs to one kind of Internet media advertising, so Internet information flow advertisement can also be priced in this way.

CPM (Cost Per Mille) Bidding Formula are in following. Calculation Formula:  $CPA = CPC \times CTR \times 1000$ , where CTR is Click Through Rate, CPC is Cost Per Click

The above content can be known from Shangshufang Information<sup>[10]</sup>.

(4) Legal Status of Internet Information Flow Advertising

With the development of Internet information flow advertising, sometimes the core content of advertising cannot be expressed well, but only superficial words, so it is difficult to further classify and distinguish advertising. Tang Ying and Huang Danwei (2020)<sup>[11]</sup> read the Advertising Law and Interim Measures for the Administration of Internet Advertisements revised in 2015, and compared them with the current regulations. Finally, put forward a method to establish an effective information flow advertising supervision system, such as government regulation, industry regulation, social supervision, construction of credit mechanism and so on.

### III. RELATED CONCEPTS AND THEORETICAL BASIS

#### 3.1 Definition of Internet Information Flow Advertising

The 21st century is an era of explosive progress in human civilization and technology. Internet information flow advertising is a new advertising mode conceived in this era, which is the complement and supplement to the traditional advertising mode, and is the inevitable product of the sustainable development in the information age and is becoming increasingly important. Facebook first used Internet information flow advertising, and then with its continuous development, China has also gradually set off an upsurge of Internet information flow advertising. Internet information flow advertising is a native advertising, widely used. For example, advertisements inserted between friend's information in WeChat Moments, advertisements mixed with search text messages when using various network platforms or APP, these can be called Internet information flow advertisements.

Internet information flow advertising is a proactive advertising marketing model. It is a form of advertisement proactively pushed by advertisers to users. The passive advertising pushed by some information platforms cannot be regarded as true Internet information flow advertisements in the strict sense. For example, when consumers use some local real estate platforms, advertising will be displayed according to the content searched by consumers. Therefore, these advertisements are not actively pushed to consumers, but passively triggered after searching. So, it's not Internet information flow advertising.

In summary, the information flow advertising is a marketing mode that uses Internet

media and other platforms to implant advertisements in information.

### 3.2 Characteristics of Internet Information Flow Advertising

#### (1) Precision Delivery

The accurate delivery of information flow advertising is mainly based on the refinement of the market. According to consumers' gender, preference, job type and other collected information, push Information flow advertising for consumers, which not only meets the requirements of advertisers, but also meets the demands of consumers.

#### (2) High Integration

Firstly, the high integration of information flow advertising is reflected in the location of advertising. Information flow advertising can appear in some news bulletins, copywriting, novels, post bar discussion areas, and are well integrated with the reading environment. Secondly, the display form of information flow advertising is generally consistent with the content of information flow, most of which are pictures plus text or text plus video, GIF and other diversified forms, thus improving browsing experience of the target consumers browsing experience.

#### (4) High Interaction

The content of information flow advertising can often attract consumers and stimulate their enthusiasm. In order to achieve the maximum integration with the content of the information flow, the information flow advertising constantly changes the display method, strengthens the emotional connection between consumers and the propaganda object, optimizes the consumption experience, then achieves high-quality and high-interaction push and delivery effect.

#### (4) Strong Conversion

Information flow advertising also has stronger conversion ability. At the beginning of advertising push, information flow advertising determines the content to be pushed according to accurate market segmentation and mass analysis. By accurately pushing the advertisement to the target audience, it can avoid the antipathy of the non-target audience to the information flow advertising, and improve the effective coverage of the advertisement and enhance conversion. Besides, information flow advertising does not occupy additional advertising space, the conversion effect of advertising is better.

### 3.3 Types of Internet Information Flow Advertising

#### (1) Large Flow Rate and Low Goodness of Fit

Large flow rate, low goodness of fit, large and scattered customer base, weak dissemination,

these are not conducive to targeted advertising. This type of media has huge flow, but the cohesion is weak and very scattered, which leads to weak dissemination. Therefore, it is necessary to further subdivide and maximize its goodness of fit with the target customer group.

#### (2) Small Flow Rate and Low Goodness of Fit

Small flow rate, low goodness of fit, for this type of new media, their preferred target customer group is very clear, such as amateur web magazines and Vlog, etc. They can provide services for some advertisers who need a trial and verification platform.

#### (3) Large Flow Rate and High Goodness of Fit

Large flow rate, high goodness of fit, this type media is usually the first choice of the majority of businesses, such as Google, Baidu, Facebook, etc. Such platforms, have good segmentation and adaptation. In actual operation, we should pay attention to controlling the following two aspects: ① Follow up the authenticity of clicks. ② Avoid the interference of excessive advertising on media attributes.

#### (4) Small Flow Rate and High Goodness of Fit

Small flow rate and high goodness of fit, this type of new media has clear customer service group, which is attractive to advertisers, but the flow is relatively small. It is suitable for customer-focused advertising. Besides, this type of media is small in scale and vulnerable to similar media, leading to a weakening of media value. Therefore, in the actual operation, it is suggested to improve efficiency by expanding customer scale, cooperating with professional media and precise delivery.

## IV. THE DEVELOPMENT PROCESS AND STATUS QUO OF INTERNET INFORMATION FLOW ADVERTISING IN CHINA

### 4.1 The Development Process of Internet Information Flow Advertising in China

Internet information flow advertising is a new advertising mode conceived in this era. It is the complement and supplement to the traditional advertising mode, and it is the inevitable product of the sustainable development in the information age and is becoming more and more important. Facebook first used Internet information flow advertising, and then with its continuous development, China has also gradually set off an upsurge of Internet information flow advertising. Internet information flow advertising is a native advertising, widely used. The development process of Internet information flow advertising in China is shown in table 4-1.



Table 4-1 Development Process of Information Flow Advertising in China

Time	Development Overview
2012	Sina Weibo information flow releases beta Ads
2014	(a) NetEase released the latest version 4.0 of the news client, introducing information flow advertising. (b) Toutiao information flow advertising was online. (c) Sina Weibo officially launched information flow advertising. (d) Tencent Guangdong announced the launch of information flow advertising on the mobile terminal of Qzone.
2015	(a) Momo launched a native advertising marketing system, and information flow advertising was officially online. (b) Sohu News launched video information flow advertising. (c) The WeChat Moments launched information flow advertising
Since 2016	(a) 360 information flow advertising was online. (b) UC Toutiao information flow advertising was online. (c) Baidu information flow Advertising was officially online.

Due to the continuous advancement of science and technology, the development of the network has been promoted, which has laid a solid foundation for the rooting and germination of

Internet information flow advertising. After that, the Internet information flow advertising platform accounts for more and more network market share, as shown figure 4-1.

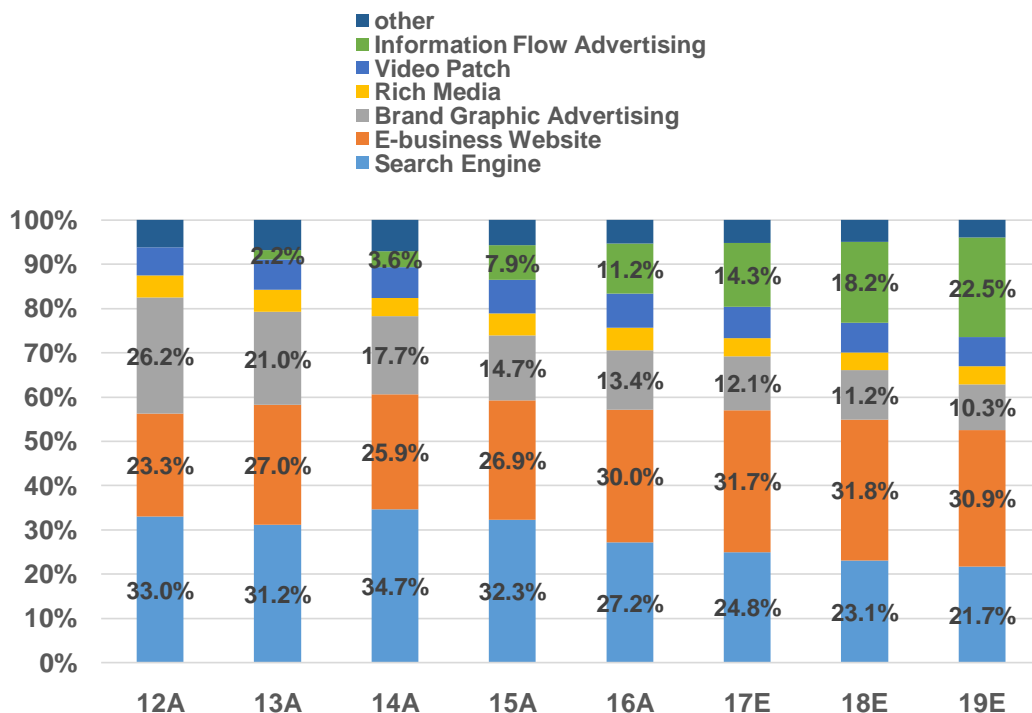


Figure 4-1 China's different forms of network market share and forecast chart

**4.2 The Development Status of Internet Information Flow Advertising in China**

In my country, the information flow market

industry chain is dominated by the first echelon Internet media. The industry rankings are shown in Table 4-2.

**Table 4-2 Competition Pattern of Information Flow Advertising Industry in China**

Echelon Distribution	Enterprise	Flagship Media	Content Ecology
First Echelon	Tencent	WeChat Moments Mobile Qzone Tencent News KuaiBao QQ Browser Tencent Video	WeChat Official Account QQ account QQ Official Account
	Toutiao	Toutiao ToutiaoVideo	Toutiao Account
	Baidu	Baidu Mobile Baidu Post Bar Baidu Browser Feed Alliance Resources	BaiJia Account
Second Echelon	Weibo	Weibo APP	Media/Influencer/KOL
	NetEase	NetEase News youdao	NetEase Account
	iFeng	iFeng News APP Yidian Information	iFeng Account Yidian Account
	Momo	Momo APP	Momo user/Influencer/KOL
	WiFi Master Key	WiFi Master Key APP	News and information provided by third parties
Third Echelon	KUAISHOU	KUAISHOU APP	UGC/KOL
	SINA	SINA News	We-Media Media Content
	SOHU	SOHU News APP	SOHU Official Account
	YIXIA Technology	MiaoPai XiaoKaXiu	UGC/Influencer/KOL
	Mito	BeautyCam Mito Mei Pai	Influencer/KOL

**Data from: Northeast Securities/Internet**

In summary, the market competition of Internet information flow advertising will become more and more intense in the future. At the same time, Internet information flow advertising resources will be more concentrated.

**V. INFLUENCING FACTORS OF INTERNET INFORMATION FLOW ADVERTISING VALUE**

**5.1 Data Quality and Data Dimension of Information Flow Advertising**

The data quality and data structure of information flow advertisement are the basis of value evaluation. The operation of information flow advertising is that the platform analyzes users based on a series of online and offline data searched by

users in real time, and then carries out real-time advertising push.

**5.2 Accuracy of Information Flow Advertising**

Accurate delivery of information flow advertising is an important factor affecting the value of information flow advertising on the Internet. Furthermore, the quality of big data and the efficiency of intelligent technology in processing big data are the key factors determining the accuracy Internet information flow advertising. The main Internet information flow advertising platforms include Tencent, Toutiao, Baidu, Weibo and Facebook. Next, this paper will compare the precision orientation methods of information flow advertising on these several platforms to clarify different precision orientation methods, see table 5-1.

**Table 5-1 Comparison of Advertising Orientation Methods of Information Flows**

	Basic Orientation	Interest Orientation	Custom Crowd	Other Orientation
Tencent	Region/Gender/ Age/Marriage Situation/Education/Mobile Phone Brand/Network Environment/Operator	Business Interest Label (18 primary classifications, 128 secondary classifications, 52 tertiary labels) APP Interest Label	DMP	Vertical Behavior Orientation/ Similar Population Expansion
Toutiao	Region/Gender/ Age/Mobile Phone Brand/Network Environment/Operator/ User Behavior	18 primary classifications and 128 secondary classifications	DMP	Article Classification/ Intelligent Orientation
Baidu	Region/Gender/ Age/Education/Life Stage/Mobile Phone Brand/Network Environment/Operator/ APP Behavior	Long Interest Intention Word Intention Label	DMP	Content Orientation
Weibo	Region/Gender/ Age/Mobile Phone Brand/Network Environment/Operator/ Activation/App Installer/User State (8 projects, 28 states)	20 primary interest, 79 secondary interest, hundreds of thousands of accurate keywords	DMP	Account Relationship/Blog Post Relationship/Topic Participation/ Data Market
Facebook	Region/Gender/ Age/Other Personal Information	Friends' Interests and Behaviors/ Speculate Based on Shared Content	Custom Audience	Lookalike Audience

Firstly, the basic orientation of each information platform is basically the same, mainly divided into region, gender, operator, user's behavior and other personal information and public information.

Secondly, in terms of interest orientation, Weibo, Tencent and Toutiao mainly use hierarchical business interest labels for interest orientation. Baidu uses the method of long-term interest classification to circle the target crowd for advertising. This makes the user's intention more precise and ensures the reliability of the information flow. Facebook make advertising more accurate by speculating on the friends' interest, behavior and sharing content of user .

The operation of DMP (Data Management Platform) is as follows: the advertiser accesses the data to the data management platform, then the data management platform automatically generates the custom crowd, and delivers ads to this crowd.

Other orientation mainly includes article classification, intelligent orientation, content orientation, account relationship, blog relationship,

topic participation, data market, etc. And Facebook is directed through lookalike audience.

### 5.3 Information Flow Advertising Presentation

For Internet information flow advertising, a good idea is an important factor in attracting audience. In order to improve the page views and click rate of information flow advertising, the development teams of many platforms actively develop advertising creative tools, such as title optimization and rewriting, using quick-match word packages, automatically add the user's regional vocabulary, etc. Most Internet platforms support both graphics and video forms.

#### (1) Big Picture

Generally, a big picture and a wonderful headline are placed together to attract the attention of the target audience, so that the target audience can have an in-depth understanding.

#### (2) Group pictures

Group pictures are usually composed of 3 small pictures. The content of this group and puzzle form is more detailed and vivid.

#### (3) Small Picture

Beautifully and upgrade the title of the information flow advertising, and make the title brief and concise, which will attract people's attention.

(4) Video

Video and audio advertising mode is more direct and dynamic, and will directly attract customers from the senses.

(5) Text Link

The text link, that is the text advertisement, through the selected text link to the enterprise or business website, which is more direct and concise.

**VI. VALUE EVALUATION OF INTERNET INFORMATION FLOW ADVERTISING: CPM ADVERTISING BIDDING METHOD**

**6.1 Selection of Evaluation Method**

Internet information flow advertising can hardly find the same or similar comparative cases, and the input capital and output value of Internet information flow advertising are not much related. Therefore, the cost method is not practical to evaluate the value of Internet information flow advertising. Among the three evaluation methods of income method, market method and cost method, the income method is more suitable for evaluating the value of Internet information flow advertising.

The three basic elements of income method evaluation include expected income, income period and discount rate. The steps of the income method to evaluate the value of Internet media advertising are as follows. Firstly, adapt the gray forecasting model to roughly calculate the income of the Internet media

advertising and focus on the accuracy test. Secondly, according to the calculated income and the principle of process utility theory, form an overall framework for the value evaluation of the Internet media advertising. Thirdly, obtain the adjustment factor of the result through the fuzzy evaluation method, adjust the amount of income and obtain a more accurate amount of income. Finally, reasonably estimate the income period and discount rate to obtain the estimated value of Internet media advertising. Internet information flow advertisement belongs to one kind of Internet media advertising, so Internet information flow advertising can also be priced in this way.

Due to the particularity of information flow advertising value, it is difficult to accurately calculate the three essential elements of income method evaluation, namely expected income, income period and discount rate. However, the research on the specific valuation method of Internet information flow value has not been systematic. In view of this, this article adopts the CPM advertising bidding formula to calculate its evaluation value for Internet information flow advertising.

**6.2 General Process of Network Information Flow Advertising Income**

When users open an APP, sometimes they may browse an advertisement (m). Then the user is likely to take the following measures. (1) Click on this ad about APP (c). (2) Download the APP (i). (3) Register after installing the APP (a). (4) Recharge after a period of use (p). (5) Other behavior. See Figure 5-1.

Figure 5-1 General Flow Chart of Internet Information Flow Advertising Revenue



**6.3 Internet Information Flow Advertising Charging Model**

(1) CPM

Cost Per Mille, that is, the cost of one thousand displays. The cost of each display of Internet information flow advertising is negligible, so the advertising display is charged for 1,000 times.

(2) CPC

Cost Per Click, which is the cost of each click. It is a pay-per-click advertisement, which is charged based on the number of times the advertisement is clicked.

(3) CPA

Cost Per Action, that is charge by specific action of consumers, and such specific action is generally the user registration, that is, the corresponding fees are the registration costs.



(4) CPS  
 Cost Per Sell, means to calculate expenses based on sales.

(5) CPP  
 Cost Per Purchase, refers to the cost required for each successful purchase, that is, the advertisement takes

effect, and the specific cost is calculated according to the number of successful executions.

(6) CPT  
 Cost Per Time, means charge by time. The time interval for charging fees is very average, usually a fixed period.

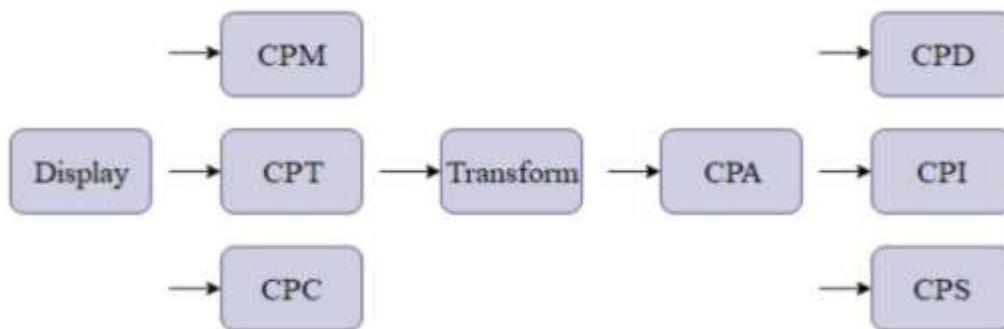


Figure 5-2 Internet information flow advertising billing method correlation diagram

#### 6.4 CPM Advertising Bidding Method

CPM is the cost of each display of a thousand ads. The cost of each display of Internet information flow advertising is negligible, so the advertising display is charged for 1,000 times. CPM billing method is the earliest billing method of Internet information flow advertising, which endows the Internet information flow advertising with practical value.

##### (1) Basic Logic

Calculation Formula :  $eCPA = CPC \times CTR \times 1000$

CTR: Click Through Rate

CPC: Cost Per Click, that is, the revenue that the information flow advertisement can obtain for each click.

##### (2) Conversion between Different Billing Methods

The process of Internet information flow advertising producing real value is generally as follows: Start from the display (m), then click on the Internet information flow advertising (c), next is download (i), after that is registration activation (a), Until the final value is realized, that is, pay for use (p). Among them, the price of each action is equal to the price of the subsequent action multiplied by the probability between the two.

For example:

$$CPM = P(m \rightarrow c) \times CPC \times 1000$$

$$= CTR \times CPC \times 1000$$

$P(m \rightarrow c)$ : The probability between display (m) and click(c), that is, click through rate.

##### (3) CPM Formula

$$CPM = P(m \rightarrow p) \times \text{Estimated Pay Offer} \times 1000$$

$$= P(m \rightarrow c) \times \text{Conversion Rate} \times \text{Estimated Pay Offer} \times 1000$$

$P(m \rightarrow p)$ : The probability between display (m) and payment (p).

#### 6.5 Basic Terms of Internet Information Flow Advertising

##### (1) Four Basic Roles

Advertisers: people who want to advertise their brands or products.

Publishers: the carrier of advertising space. For example, Toutiao, QQ browsers, etc.

Agency: institutions that play an intermediate role.

Audience: people who accept the advertisement.

##### (2) Other Commonly Used Terms

CVR (Click Value Rate), the probability that the Internet information flow advertising will eventually receive income during the advertising period, also known as the conversion rate.

ROI (Return on Investment), the ratio of the revenue brought by information flow advertising to the total investment in a period of time. Where the value is greater than 1, it is profitable.

LTV (Life Time Value), the total value brought by consumers to advertisers during the use of advertising products.

eCPM: (effective Cost Per Mile), thousand times of display revenue, is an indicator for the media to measure the efficiency of their advertising production.  
 $eCPM = CPC \times CTR \times 1000$ .

## VII. CASE STUDY ON VALUE EVALUATION OF INTERNET INFORMATION FLOW ADVERTISING

### 7.1 Internet Information Flow Advertising Evaluation: CPM Method

#### (1) Case Introduction

When using information flow advertising to promote a certain application APP, suppose that the consumer's consumption cost is less than 80 yuan. When the income from the consumer is greater than the cost of the consumer to obtain the APP, the profit can be made. Therefore, it is inferred that the consumer's pay offer is 80 yuan. According to the previous information flow advertisement push data, the probability from m to p can be calculated. Suppose the estimated CTR is 0.03, the download rate is 0.1, the registration rate is 0.4, and the payment rate is 0.1.

#### (2) Case Calculation Process

$$P(m \rightarrow p) = CTR(m \rightarrow c) \times P(c \rightarrow i) \times P(i \rightarrow a) \times P(a \rightarrow p)$$

$$= 0.03 \times 0.1 \times 0.4 \times 0.1 = 0.00012$$

$$CPM = p(m \rightarrow p) \times \text{Estimated Pay Offer} \times 1000$$

$$= 0.00012 \times 80 \times 1000 = 9.6 \text{ RMB yuan}$$

So, the advertiser's CPM bid is set at 9.6 RMB yuan.

### 7.2 Valuation of Internet Information Flow Advertising: Taking WeChat and Taobao as Examples

#### (1) Valuation of WeChat Information Flow Advertising

Assuming that the CPC (Cost Per Click) of the advertisement at the bottom of the WeChat main page is 0.1 yuan, that is, the advertiser pays 0.1 yuan for each click. The CPM (Cost Per Mille) is 1.5 yuan, that is, the advertiser pays 0.0015 yuan for each page view.

Suppose the advertiser pays 0.15 yuan for each viewing of the WeChat Moments advertisement. The CPM is 100 /1000 yuan, that is, the advertiser pays 0.15 yuan for each viewing of the WeChat Moments advertisement.

WeChat official accounts usually have tens of thousands to 100,000+ views or clicks on We Media articles, and top official accounts usually have

400,000+ views. In particular, in most first-tier developed cities, the number of official accounts is tens of thousands, covering different industries. The price of some headlines ads is as high as hundreds of thousands of yuan. Thus, the value of Internet information flow advertising cannot be underestimated.

#### (2) Valuation of Taobao Information Flow Advertising

##### (a) Information Flow Advertising Value When Opening Taobao APP

Generally, when you click to open Taobao AP, it will generate 0.05 yuan of advertising costs. Assume that the main interface of Taobao APP has four carousel pictures and the diamond promotion position (the position of the big picture at the top of Taobao) contributes 75% to the full page. Therefore, the value generated by the full-page carousel is 0.05 yuan ( $CPM \times 0.001 \times 4/0.75$ ). That is, every time the Taobao APP is opened, a value of 0.05 yuan will be generated.

##### (b) Information Flow Advertising Value When Searching on Taobao APP

Assuming that every search on Taobao, an advertising fee of 1.05 yuan is incurred. Suppose we search for stationery on Taobao, there are 17 through-car columns on the homepage of the stationery search, and the diamond display position shows 3 search results on the homepage.

The CPM on the front page of the diamond display is about 10 yuan and the CPC on the front page of through-car columns is about 3 yuan, and the CTR is 2%.

$$CTR \times CPC \times 17 + CPM \times 0.001 \times 3$$

$$= 0.02 \times 3 \times 17 + 10 \times 0.001 \times 3 = 1.05$$

Therefore, every time you open the home page of Taobao App and search stationery once, Taobao App can receive 1.05 yuan of information flow advertising browsing value.

### 7.3 Influencing Factors of Internet Information Flow Advertising Value

Firstly, Internet platforms such as Taobao, WeChat, etc., these Internet platforms do not manufacture or provide products, but provide a very convenient and safe platform space for two parties or multiple parties to communicate or buy and sell, and charge a reasonable fee and gain revenue from it.

Secondly, browse the advertisement page on different platforms such as WeChat and Taobao, the advertisers pay different expenses. The value of the advertisement depends on the user quality of the interface in which the advertisement appears. If advertisements appear on webpages frequently browsed by high-consumption groups, for example, advertisements appear on websites with more

expensive commodities, the value of Internet information flow advertisements on that website must be much higher than that of an ordinary commodity website. Because of the different communities, the quality of users browsing the web is different.

Finally, the value of the advertisement is measured by the location of the advertisement. If the ads displayed in the bottom bar are not seen, they will still be considered as viewed. If an advertisement does not bring any clicks or purchases, but it will leave an impression on the customer, which will guide the customer's next purchase behavior.

### VIII. CONCLUSION

Internet information flow advertising quickly occupies the advertising media market with its unique advantages, whether in China or the United States, has become the main force in the advertising media, with high research value. After comprehensively referring to the research results of domestic and foreign scholars, this article mainly discusses the following points. Firstly, study the relevant theories of Internet media advertising, study the definition, characteristics and types of Internet media advertising, and have a deeper understanding of Internet media advertising. Secondly, research on the value influencing factors of Internet media advertising, including the data quality and data dimensions of information flow advertising, the algorithm and presentation form of information flow advertising. Thirdly, discuss the evaluation method of Internet media advertising value. Due to the particularity of the information flow advertising value, and the actual research on the value evaluation method of Internet information flow has not yet formed a system, this article adopts the CPM bidding formula to evaluate the Internet information flow advertising value, and elaborates the process of adopting the CPM formula to calculate the Internet information flow advertising value.

With the expansion of the Internet information flow advertising market, researchers have focused on the evaluation of Internet information flow advertising value. However, in general, there are relatively few researches on the evaluation methods of Internet information flow advertising value. Based on the original research, this paper adopts the CPM bidding billing formula to explore the evaluation method of Internet information flow advertising value. However, due to the limited literature and materials selected, the theoretical aspect is not yet systematically mature, which needs to be continuously studied, studied and perfected.

The long-term development of information flow

advertising in the future is bound to be highly and seamlessly integrated into every inch of space of network users. At the same time, Internet information flow advertising value evaluation will also have further development. The two complement each other and have a profound impact on the development of Internet media advertising.

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