Construction of Advertising Media Based on Block Chain and Dynamic Communication

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Compared to the traditional mass environment, the new media environment uses computer networks, digital technologies, radio communication networks, mobile phones, computers, and other channels or terminals to provide information services to the audience. The traditional marketing model using advertising cannot effectively achieve transparency and direct quantification, and the advertising fee is high. New media uses implantable, experiential, and interactive marketing methods to regulate the information that is delivered, and to deliver more accurate advertising messages to target consumers. This paper proposes the visual analysis of advertising communication paths in new media and the bloc chain environment. The proposed method can enhance the traditional advertisement and the related products delivering patterns. The numerical performance of this approach is validated.

Keywords: New media, Block chain, Internet of things, Advertising, Transmission path, Visualization analysis

1. INTRODUCTION

Each kind of behavior is driven by the corresponding motivation and demand [1]. The generation of consumer information search behavior seeks the reduction of general uncertainty and risk in purchasing decisions. Consumers and businesses are often a symmetrical in information possession and use [2]. Consumers are generally at a disadvantage with respect to information. They are non-expert purchasers in relation to the cost and efficacy of the company's products, differences in similar products, and future price trends Such information is very clear to businesses, in the state of information superiority [3–4]. Such asymmetric information possession will lead consumers to have an uncertain risk perception of the purchase behavior that occurs. Ing Watson believes that the nature of this state of uncertainty is a state of the doubt [5]. When the individual's own knowledge structure, cognitive abilities, or work experience cannot satisfy the answer to a certain problem, the individual must also obtain enough information support through further thought or through interaction with

the outside world [6]. Consumers' information search seeks to obtain the required advertising information from various channels, to increase their awareness of a certain brand or commodity and help them make correct judgments to reduce the uncertainty and risk in the purchase process [7–8].

Since its recovery in 1972, the advertising industry has achieved considerable development thanks to the rapid economic development in China. With the advent of the new media era, the advertising industry has greatly increased the cost of advertising [9]. Survey data shows that in 2008, the cost of placing TV commercials surpassed newspapers and outdoor advertising, causing the latter to drop by the 6.7%. The competition in 2013 was extremely fierce. New media such as mobile media and the Internet seized opportunities for development [10]. Its share was significantly higher than that of traditional media. At the same time, the share of television media was already being reduced by the online advertising market, and there were even other alternatives to traditional media. According to the latest statistics from the National Bureau of the Statistics, the turnover of China's advertising

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industry in 2014 was as high as RMB 55,560 million, an increase of 11.67% year-on-year.

With such a huge system and rapid growth, there is more urgency to adjust and reshape the advertising industry structure.The role of advertising in social cognition is gradual, and the impact on social cognition is a long process [11]. This process is inextricably linked with advertising consumption, and people's consumption process of advertising is influenced by the social cognitive schema [12] The dissemination of information to the audience by advertisements is not a simple and one-way indoctrination process, but should be the role played by the audience's psychological construction mechanism.

In a sense, the level of a public service advertisement in a city, a region is an important symbol of the culture, ethics and social ethos of this city, region and country. A good public service advertisement can penetrate people's hearts, creating a harmonious exchange of atmosphere and access to more concessions [13–14]. The direct effect of this event on the newspapers is to drive the rapid growth of real estate advertisements in the newspaper, and the effect is further extended through the planning of activities to consolidate the position and influence in the real estate industry [15]. A wide range of reactions, including emotions, sadness, fear, anxiety, etc., leads to a mixture of cognitive, voluntary activities and physical activity and it participates in every aspect of the process of listening [16–17]. As we explore the cognitive process of listening comprehension, we gradually discover the importance of the emotional process. In narrowly substantiated studies, the factual forms of grammaticalization, that is morphological changes are also the focus of many scholars. In their opinion, the factual components of language are independent of cognitive modality. They are a category of the grammar with independent semantic function, especially in the linguistic system that transmits the lingual meaning through the change of vocabulary form [18]. In the face of some objective things, the means chain of objective leads people to follow the cognitive path of shame: the core values of attribute cognition. In advertising cognitive research, attribute cognition is equivalent to the audience's cognition of advertising features, such as the color of advertising, music background leading people to a psychological experience where the psychological outcome refers to the basis of attribute cognition [19]. The audience is inspired by the hair level association including positive and self-emotional experiences, such as an increase in self-esteem as the audience imagines themselves using the product and the core values through which theads inspire audiences. Success is very important and that is, the core value.

After the above three processes, the audience can form an overall evaluation of the advertisement and finalize the product's cognitive attitude [20]. From the perspective of linguistic semiotics, multi modal refers to conveying meaning using combinations of two or more forms of symbols such as text, image, voice, color, video, gesture, smell and taste.

The multi modal metaphor refers to the metaphor in which the source and target domains are represented by the main different symbolic systems, whose target and source domains are represented in different modes. Qualitative research can

reveal consumers' deep motivation, psychological experience and core values in advertising cognition.

It is very necessary for enterprises to understand the advertising cognition of consumers. This is very beneficial to the product market segmentation audit. Following the consumer cognitive style of advertising, is the choice of advertising design and optimization on the basis of detailed investigation on multiple advertising audiences so cognitive differences are catered for A definite quantitative study of the direction of measurement is essential.

Under the traditional media environment, consumers are merely "one-way people" as described by Marcuse. The high cost of information search and the limited opportunities for information search have led to weakness in information gathering and analysis. Consumers have no pervasive advertising information. They have taken the purchase action without questioning mostly under the urging of the authoritative media without questioning. With the development of new media technologies, the entire media market has undergone earth-shaking changes. "First, there are more media sources, more communicators, more media products, more means of dissemination, and more large channel space, and for media consumers, the overall actual cost is gradually reduced; second, the use of new technologies for recording, storing, and replaying media content has increased people's flexibility in using media and increased their use. The possibility of the audience being protected and controlled by media agencies is reduced." Through the new media's technological empowerment, consumers who have been passive have awakened from the traditional information acceptance model and actively choose the type of advertising and brand information that they are willing to watch. As Negroponte said, information is no longer pushed to consumers by the mass media, but is pulled by consumers based on their own needs. Consumers have shown unprecedented enthusiasm and initiative. They are abandoning traditional single sources of information and constantly searching for, comparing, verifying, and sharing advertising information based on their own needs and preferences.

2. VISUAL ANALYSIS OF ADVERTISING COMMUNICATION PATHS IN NEW MEDIA AND BLOCK CHAIN ENVIRONMENT

2.1 Blockchain Technology

Blockchain is a new application mode of computer technology such as distributed data storage, point-to-point transmission, consensus mechanisms, and encryption algorithms. The so-called consensus mechanism is a mathematical algorithm for building trust and acquiring rights between different nodes in a blockchain system.

It is essentially a decentralized database, and at the same time it is the underlying technology of Bitcoin. A blockchain is a series of data blocks generated using a cryptographic method. Each block of data contains a bitcoin network transaction information to verify the validity of the

Table 1 The Challenges for the Advertising Communication.

Challenges for the Advertising Communication	In Which Form?
Audience roles change and personalization requirements increase	The changing role of audience including the transition of the audience psychological needs in that they began to be concerned with culture and value of goods; begin to pursue personalization in the hope that can receive goods from advertisements using the value of information, so as to determine whether with these align with their own personality, identity, values, etc.
New media has advantages such as price advantage, spread advantage and precision that traditional media cannot match. The continuous development of new media provides advertisers with new channels of communication	The advertising communication mode under the new media environment is no longer a one-way linear process. The information of advertising communication can flow in two directions between the communicator and the recipient. The communication will get feedback from the recipient. The mode of advertising communication is also more flexible, faster and more convenient. The development and competition of advertisements have also contributed to the continuous improvement of ideological and artistic quality. With the ever-increasing level of economic development and the transformation of social consumption patterns, advertisements are becoming more and more ingenious in the global environment of modern international society. The connotation of ideas and aesthetics is constantly enriched, and modern advertisements have entered simpler information and the impact of some content symbols with the stronger stage.
Excessive advertising information makes it difficult to stand out	Propagation model, the audiencehasincreased autonomy. Traditional advertising communication is one-way linear mode, the audience on access to information, the more passive. This mode of advertising to attract attention is somewhat forced. New media environment to facilitate a two-way interactive communication mode of the form, the audience after receiving information on the Feedback link in the whole process of dissemination is essential. As the autonomy, the audience's consumption, particularly in the prevalence of false advertising today, who are vulnerable to advertising to generate the resentment of the diffusion in that strategy of higher requirement.
Impetuosity intensifies	Since the internet media has hypertext link technology, the audience has the freedom to choose to browse quickly, and often it is still necessary to exit or jump to other pages when the complete information is read. The leaping browsing mode and the immersive reading experience gave birth to the impetuous psychology of the audience in the new media era.

information (anti-counterfeiting) and generate the next block. The concept of blockchain was first proposed at the end of 2008 by Bitcoin: A Peer-to-Peer Electronic Cash System published by Satoshi Nakamoto in the Bitcoin Forum. The blockchain technology in the paper is the basic technology for constructing the Bitcoin data structure and encrypted transmission of transaction information. This technology realizes the mining and trading of Bitcoin. Satoshi Nakamoto believes that: First, the use of third-party institutions to process information has endogenous weaknesses in the lack of trust between different points. In order to prevent their own customers, businesses will ask the customer for completely unnecessary information, but they still cannot avoid certain frauds; Second, the existence of intermediary agencies increases transaction costs and limits the practical minimum transaction size. Third, digital signatures can solve e-money identity problems. If you need third-party support to prevent double consumption, the system will lose value.

Based on the above three existing issues, Satoshi Nakamoto created bitcoin based on the blockchain technology as set out below

$$P = \frac{t \arg et}{HASH_{\max}} \tag{1}$$

$$t \arg et_{new} = \frac{t}{time} * t \arg et \tag{2}$$

$$difficulty = \frac{t \arg et}{current_{t \arg et}} \tag{3}$$

2.2 The Bottleneck Faced by the Advertising Industry in the New Media Environment

Compared to companies and the media, the advertising industry has always been in a disadvantageous position in the three-party game, and the value of advertising companies has not been widely recognized for a long time, leading to them being paralyzed between generalization and low efficiency.

The traditional advertising marketing model cannot effectively achieve transparency and direct quantification, and the cost of advertising is still high. New media will adopt embedded, experiential and interactive marketing methods to adjust the information passed to the target. The advertising information delivered by the consumer population is more accurate.

At present, most of China's advertising companies are small and scattered. The performance of market research institutions, consulting agencies, and content providers (specially targeted at the media) is lacking. As a result, consumer associations have not played their part and the industry chain has become disconnected.
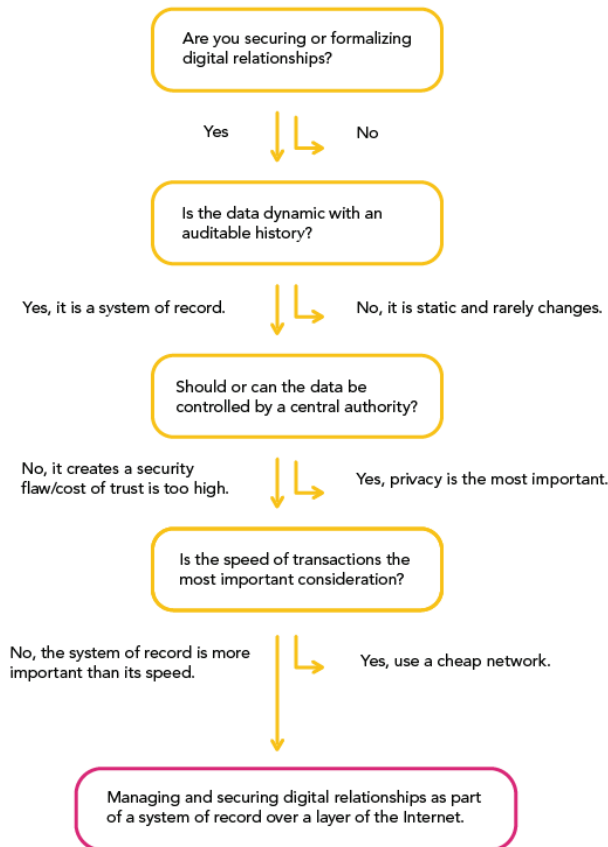
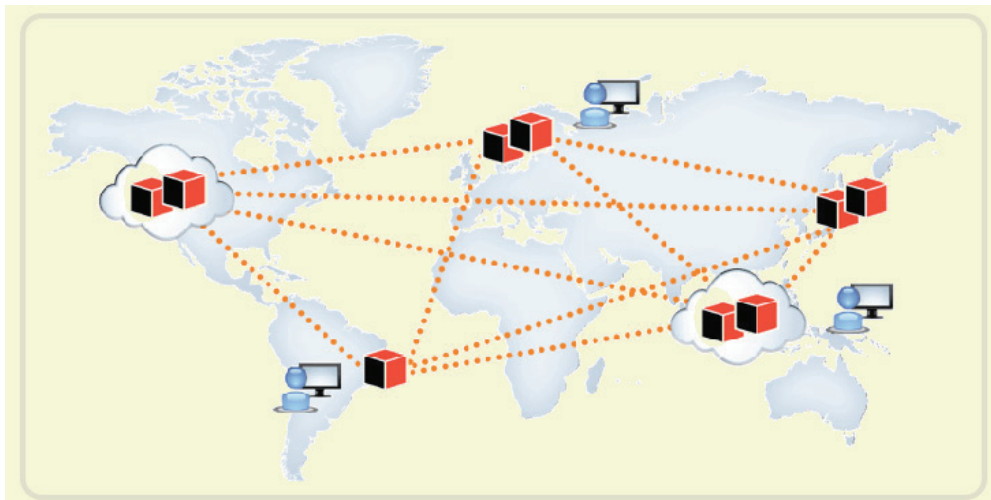**Figure 1** The BC Security Framework.

Figure 2 Blockchain is a special distributed database.

The drawbacks of the supervision system for the advertising industry are gradually exposed. The most common ones are lack of administrative execution, lack of enforceable laws, and imperfect industry self-discipline. With the arrival of the new media era, the above problems will cause the advertising industry to face more severe challenges.

2.3 Maintaining Mutual Trust Consensus based on Blockchain

From the perspective of personnel, personnel, the problem mainly arises from the decentralized and untrusted dimen-sions. The trust of blockchain implementation comes from the recognition of the consensus mechanism by all participants. Within this mechanism, all people are equal, that is, journalists are decentralized. With the development of new media, news production gradually moves towards citizen participation, and the dissemination of topics is more diverse. The blockchain can help the mutual supervision of various subjects in science and technology news reporting, but it undoubtedly puts higher requirements on the professional qualities of science and technology news reporters. They need to use plain language to explain profound scientific and technological knowledge without distortion. This requires that they not only have the ability to communicate, but also have the ability to understand
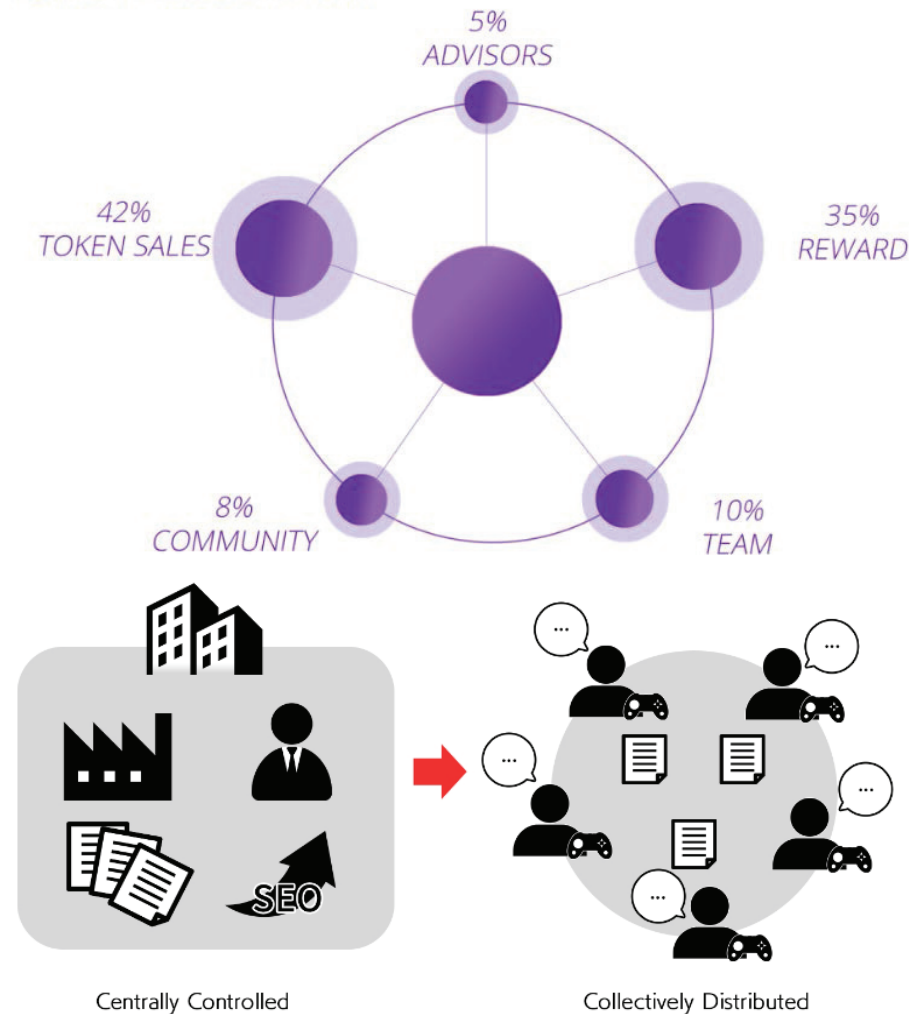
Figure 3 The BC Inner Organization

this scientific knowledge, the technical terms and natural philosophy, and find a unique perspective.

Throughout the process of news dissemination, the media is the intermediary and conduit forthe science communication process. It provides a bridge between the public and the exchange of science. However, the media does not exist in isolation. It is a two-way and one-way communication process. Its operation will affect the audience and science workers. The credibility of the media will influence the acceptance of news content by its audience. In social science, trust is considered a dependency. Not only is it of great value, but it is also an intangible asset. Science and technology news reports rely on this relationship in particular. Science and the technology news reports use metaphorical methods for language translation and reprocess science processes to reach audiences.

However, there are significant differences between the block chain technology and the traditional IT architecture, and many traditional privacy protection schemes do not apply in the block chain application. In a traditional IT architecture, data is typically stored in a centralised server, and the key to privacy protection is to ensure that data is not leaked and the managers, therefore, can improve the defense capability of the center node to resist various attacks, such as the use of high-

performance server, deploy intrusion detection equipment, installation, dedicated data leak protection software, etc.

In block chain technology, the data is stored in scattered nodes. Without unified management, the performance and security capabilities of the nodes are also uneven, and the attacker can easily capture some of the nodes.Traditional cross-border settlement payment in order to reduce cash flow, need a central clearing system as a counter party for billing and netting, need to go through before and after multiprogramming such as the Banks, central Banks and the foreign Banks, and different institutions have their independent accounting system, each system is not same, so the multi-level set up agency relationship, in a different system for recording and counter parties reconciliation and liquidation, etc. As the basis, we propose the following:

(a) In the early block chain digital currency applications, general transaction records were usually public and did not require additional protection. However, with the application of the blockchain technology to banking and other financial sectors, transaction records are important sensitive data, and additional measures are needed to limit the use of unauthorized users. In addition, the transaction records usually reflect some sensitive

knowledge, may reveal that the privacy of the basic user identity privacy and trading is the user privacy when using block chain technology needs to focus on the protection of content, once these information leak is likely to cause harm to the user. And because the data stored in the block chain global ledger cannot be deleted and tampered with, even if the user finds that part of the address or transaction data has been exposed, no rescue measures can be taken. For example, in the traditional domain, it is possible to reduce the scope of privacy propagation by deleting the exposed data, but it is difficult to implement similar schemes in the block chain. Therefore, the blockchain system should pay more attention to privacy and improve the privacy protection ability.

(a) Blockchain addresses have better anonymity than traditional accounts. However, when users use the blockchain address to participate in the blockchain service, they may reveal some sensitive information, such as the trajectory of blockchain transactions at the network layer. This information may be used to infer the trueness of the blockchain address as identity.

But this also brings another problem. The way and content of news reports on scientific topics are often very serious and will leave ordinary readers astray. Imagine journalists turning a blind eye to changing scientific reports to entertaining mass topics. Therefore, one of the issues that needs to be discussed in the blockchain is how to write scientific reports in a form that scientists and the general public would love to see.

As the most widely used method of scientific communication, science and technology news reports are very important in popular science and improving the quality of citizens. Without the intermediary participation, the process is highly efficient and transparent, the cost is low, and the data is highly secure regional chain model. It is precisely that we can think about the development of stable science and technology news. One of the ways. The implementation of this smart contract requires not only the use of big data, cryptography, distributed database technology, p2p networks, hashing, consensus algorithms, and other recent knowledge.

3. THE DEVELOPMENT PATH OF ADVERTISING INDUSTRY IN NEW MEDIA ENVIRONMENT

The competition under the new media environment is becoming increasingly fierce. Affected by its impact, advertising companies must first fully understand the importance of the core business philosophy, gradually establish their own positioning, and then create a brand that represents their own image and differentiate the market as The main development goals. The way in which advertisements are disseminated should also be transformed into interactive and focused communication. The new media market should be expanded. This requires that traditional advertising companies should rely on long-standing customer resources and financial strength, fully recognize the importance of resource development and

technological innovation, and gradually establish a favorable audience, advertising effectiveness evaluation. Good and the customer information full new media database. Advertising companies should also gradually establish a sound personnel training and corresponding reward and punishment mechanism in order to achieve innovation in human capital.

In order to do a good job in advertising supervision, registered advertising companies should formulate advertising operation specifications consistent with the new media environment from their own actual conditions, and should set up a special network supervision department to ensure scientific and professional advertisement monitoring. The theory of cognitive structure of social cognitive psychology (ie, schema theory) provides a concise analytical model for social cognitive processes. Schema in cognitive psychology refers to a unit of cognitive structure and is a core concept in Piaget's cognitive development theory.

The process of constructing a schema, that is, the process of the cognitive formation, the collection of schemas is the entire knowledge of a person or thing. This is because each type of media may not cover all of the target object, it has its specific subject groups, if you rely only on a single media it is unable to then provide all of the objects in advertising. In addition, today's consumers' access to information are diverse, some people through the Internet, some people through the TV and some people with a cell phone, if advertisers seize a single media that he will lose a large part of the consumers, to achieve the purpose of the diffusion. In addition, every single media has its own specific characteristics of the properties, the same ads, they may serve different roles that interaction between the complement each other and be able to effectively disseminate information.

As a result, the new media environment based on the diffusion of the mutual cooperation between the media and the media the organic combination can greatly increase the speed of diffusion as well as popularity for the dissemination of the advertisement for the better. The research results of cognitive psychology on implicit cognition promote the research and development of individual cognition differences. It reveals that unconscious components participate in the conscious process of social cognition processing and potentially affect the individual's response to social objects. The stubborn influence of social culture on social cognition cannot be ignored. It affects the changes of social cognition.

Advertising uses social, gender, age, and income levels as an indicator of some social stratification, prompting the gradual convergence of people's social cognition. For modern people, emotional life is extremely important. People are the most emotional, and have special needs in terms of emotional pay, emotional enjoyment and emotional fantasies. In advertising creativity, if we can design advertising screens, plots, and copywriting that express an emotional life based on the characteristics of the product, the brand image, and the emotional emotions of the target public, and create an artistic conception with emotional appeal, then we can induce the public to respond accordingly as emotional emotions, emotional illusions as trying to get a good emotional experience through the consumption of goods. So nostalgia, affection, friendship, love, romance have been widely used in advertising. People realize in advertising practice that logic
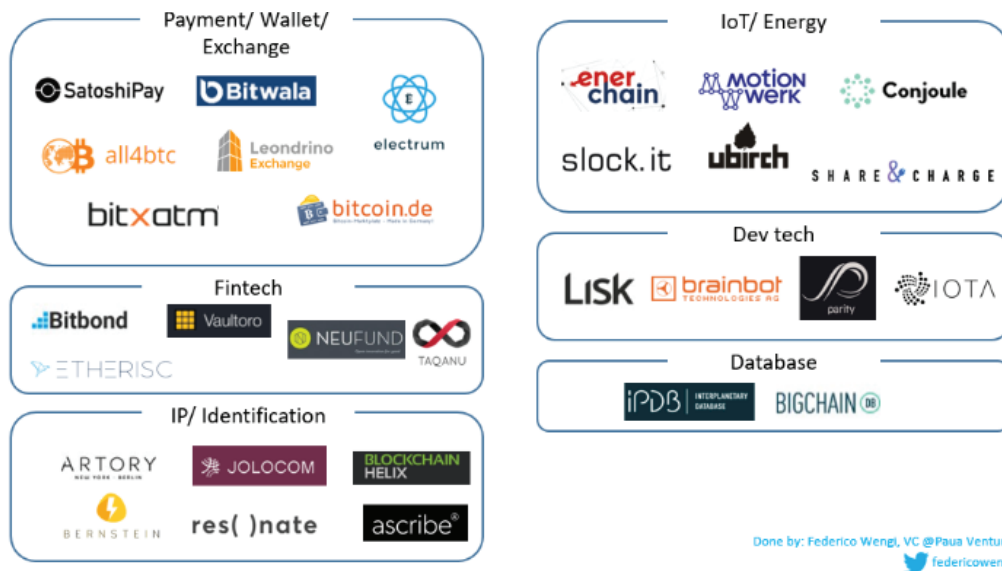
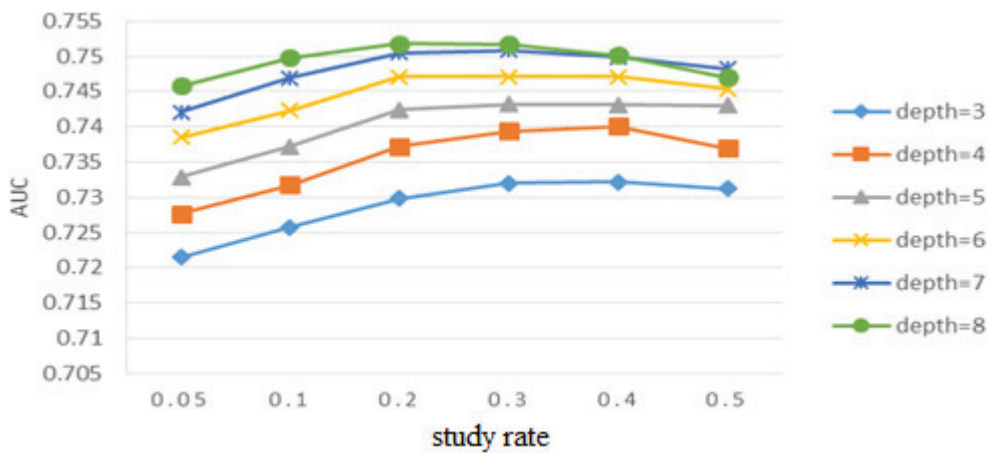**Figure 4** Brands Using the BC Technology.

Figure 5 Relationship between the evaluation of decision tree model indicators and tree depth and learning rate.

and reason are not the best means to persuade purchases. Emotion and experience is the real weapon to surrender to the brain and the reason is giving way to the intuition and feelings of the eastern way.

As can be seen from Figure 5, regardless of the depth of the tree, the AUC index of the online advertising attention evaluation tree model decreases as the learning rate rises first, and after the tree depth is 7 or 8, the learning rate is 0.2 or 0.3 and the AUC is high. However, taking into account the depth of 7 or 8, the AUC is not much different, and the depth is 8 and the training time is longer when the learning rate is 0.2. Therefore, this paper will use a tree depth of 7 and a learning rate of 0.3 as the final online advertising attention assessment decision. Model parameters have the tree model.

In general, the greater is the number of online advertisements focused on assessing the tree of decision trees, the better is the model, but the longer is the corresponding training time. Therefore, it is usually necessary to select the number of trees for evaluating the decision tree model according to the actual situation. When the distribution of training data categories is extremely unbalanced, it seriously affects the prediction accuracy of the model. Therefore, in

this paper, when negative samples have two or more data levels of positive samples, a reasonable sampling strategy is needed to make the training samples as balanced as possible without losing valid information. This paper experimented with the effect of evaluating the decision tree model for online advertising focusing on a variety of positive and negative sample proportions, as shown in Figure 6.

The development of the advertising industry under the impact of the new media is facing unprecedented challenges. Traditional advertising companies, in addition to the need to maintain a clear-headed mind set in the response process, have established specific coping strategies. They should also promptly grasp the advertising industry under the new media environment. The direction of development. First of all, we should change the previous mode of communication and return to the advertising ontology to ensure positive interaction between advertising companies, companies, and the media. The impact of new media on the business model and profit model should be gradually transformed, with emphasis on ROI and creating a broader market prospect. Respond to the current communicators identify the positioning of the advertising industry in the cultural industry, in order to
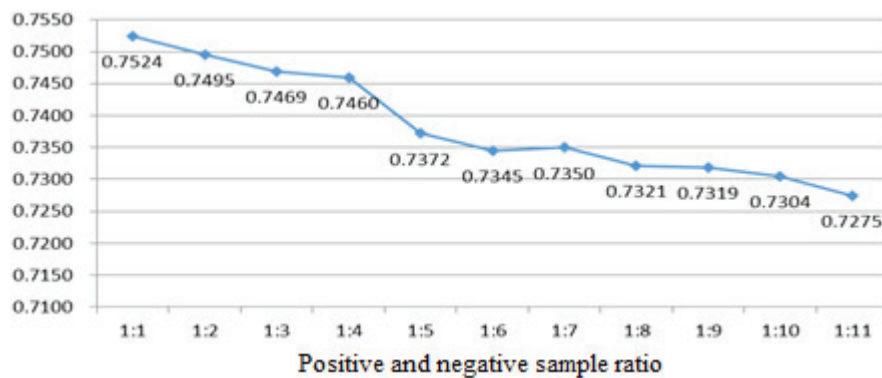
Figure 6 The AUC index of the evaluation-decision tree model for online advertising under different positive and negative sample proportions.

enhance its value in the process of social and economic development. In addition to relying on the mass media to find new platforms to increase the use of online information, allowing the audience to deepen their understanding of advertising industry while achieving the expansion of a new generation of consumers, thus providing a more scientific decision-making basis for the future development of the market.

4. CONCLUSION

New media emerged as a result of the emergence of new technologies. As an industry based on modern media technologies, the advertising industry has been constantly challenged by the new media environment. Only by properly adjusting and reshaping the industrial structure and integrating its own development with the new media environment will it be beneficial to maintain its influence in social and economic development and achieve its own stable development.

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