Research Summary of Socialized Q & A Community under the Background of Computer Information Technology

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Abstract: The emergence of Web2.0 technology and the development of social media provide technical support for the establishment of social Q & A community. The rise and vigorous development of social Q & A community has also caused a wave of research on social Q & A community by scholars at home and abroad. Through reading the relevant literature at home and abroad, the author found that the research results of scholars at home and abroad mainly focused on the platform, technology, questions, answers and users.

Keywords: Web2.0 technology, social media provide technical, social Q & A community

1. Introduction

Marx's historical materialism holds that the masses are the creators of history, and knowledge information is an important product of human history creation. The continuous development of human civilization is reflected in the continuous production, inheritance, re production and re inheritance of knowledge and information. If the circular chain of the production and inheritance of a civilization breaks, it means that the civilization will perish, and the dissemination of knowledge and information plays a key role in the circular chain. Whether it is the birth and spread of the four great inventions of the ancient East, the rise and expansion of the modern western Renaissance, or the globalization of knowledge and information, it is a good proof that the development history of human civilization is actually the development history of the generation and spread of information. Before the third revolution of science and technology, the channels of information production and dissemination generally showed the characteristics of one-way interaction, lag of feedback and singleness of form. During this period, people can only passively accept the single form of information, and can not well feed back the received information and disseminate the output information. There is a lack of large-scale interaction between people. After the third scientific and technological revolution, especially the application of Internet communication technology and the vigorous development of social networks, the way of human communication and acquisition of knowledge has undergone tremendous changes. From the previous information content-based to the user, information content and community operation based, the social communication channel supported by network technology is more and more popular A community is one of the important representatives.

Online Q & A community started in 2002. With the continuous development of network information technology and the continuous upgrading of people's demand for information, online Q & a community is constantly enriched and improved. In the era of Web1.0, online Q & A communities mainly focus on raising and answering questions, and pay less attention to the social relations and community interaction between users, which makes the community relationship loose and the stickiness between community members low, resulting in a high turnover rate of community users. Yahoo! Answer of the United States and Baidu of China know that they are the early online Q & A communities Typical representative. With the advent of Web2.0 era, great changes have taken place in the diffusion and acquisition of knowledge [1]. On the basis of the basic functions of online Q & a community in Web1.0 era, social functions among community members have been added, forming a new form of online Q & a community -- social Q & A community. Quora abroad and Zhihu at home are created based on Web2.0 technology. In the era of Web2.0, social Q & a community emphasizes the diversity of knowledge and information forms and the interaction of community users. For the diversity of knowledge information forms, community users can not only publish text, but also publish pictures, videos, voice and other multimedia content in the social Q & a community. The diversity of knowledge information forms is conducive to increasing users'

interest in information reading, so as to improve the interactive circulation of community knowledge information. For the interactivity of community users, social Q & a community no longer only focuses on questions and answers, but also pays more attention to the interaction between users and users, users and topics, and users and questions, forming a close community network that is convenient for users to obtain and share information. This kind of community network presents the characteristics of high cohesion, and the community members have high stickiness to the community, which is conducive to the formation of a sustainable community ecology for long-term use of user members.

2. Research background

With the development of network information technology and social media, as well as the continuous upgrading of user demand level, a new model of online community, social Q & a community, has emerged. Social Q & a community, also known as social network Q & a community, is a kind of Q & a community after the upgrading of traditional online Q & a community. The traditional online Q & a community is established based on Web1.0 technology. Due to the limitation of technical factors, the online Q & a community focuses on the raising of questions and the acquisition of answers, neglecting the social contact and interaction between users, forming a loose social network, and the loss of community users is serious [3]. In the era of Web2.0, online Q & a community highlights the characteristics of "socialization" and forms a socialized Q & a community. Compared with the traditional online Q & a community, social Q & a community not only provides users with basic functions such as asking and answering questions, but also emphasizes the social contact and interaction between users, realizing the close combination of "Q & a" and "socialization". It effectively improves the viscosity of users to the community and reduces the loss of users, which is conducive to the long-term development of the community.

In the era of Web1.0, NHN of South Korea founded the world's first online Q & a community knowledge in 2002, followed by Answerbag and Yahoo! At this time, the online Q & a community mainly provides basic functions such as questions and answers, and less consideration is given to the interaction between users, which also determines that these Q & A communities can not go further. And the fact is exactly the same. For example, the largest English Q & a platform in foreign countries has seen a sharp drop in user visits in recent years Answers even shut down its online Q & a business, and domestic communities such as Baidu Zhizhi and 360 Q & A are also in the dilemma of user loss. In view of the failure of traditional online Q & A communities, in the era of Web2.0, a number of social Q & A communities that pay more attention to user contact and user interaction have emerged, such as the well-known social Q & A communities such as quora and Zhihu A community is not so much an online Q & a community with social attributes as a social networking site with basic functions such as asking and answering questions. Figure 1 shows the development of online Q & a community at home and abroad.

Figure 1: The development of online Q & A community

In the social Q & a community, users can not only obtain the knowledge they need by asking questions and keyword search, but also contribute knowledge to other members of the community by writing articles and answering other people's questions. In the process of acquiring and contributing knowledge, users interact with each other, and users interact with the community, forming a relatively stable interaction network. After the formation of the interactive network, users can better obtain the knowledge they need and provide knowledge for other users, so as to improve the enthusiasm of users to participate in the community. The realization of users' acquisition and contribution of knowledge forms a stable interactive network, which in turn affects users' acquisition and contribution of knowledge, which is the embodiment of the value realization of the combination of "Q & a" and "socialization" in social Q & a community. In view of this, scholars at home and abroad have put forward a similar definition of social Q & a community. Lou et al. [4] believe that social Q & a community is an online knowledge sharing community that organizes knowledge exchange in the form of Q & A. the whole knowledge process of the community is problem driven, and the interaction between users is realized in the process of solving problems. Xiao et al. [5] defined social Q & a community as the combination of Q & a community

(exchanging information through Q & A) and social community (interacting with content creators in the community). Users obtain information from content creators through inquiry and interaction. Shah et al. [6] defined social Q & a community as a web-based service platform, which allows people to find information by asking questions and getting answers from others. Social Q & A enables users to post questions, comments and discussions with others. Xu Yiming [7] believes that social Q & a community is a social network that meets the needs of users to ask and answer questions, and is an interactive Q & a mode in which community users answer other users' questions while asking questions. Pan Mengya [8] believes that social Q & a community is a social network platform based on Web2.0 technology, spanning time and space constraints, and users' knowledge exchange, knowledge sharing and other behaviors. Yang zhe [9] believes that social Q & a community is a collection of Q & A, sharing and socialization, and is the highest form of online Q & a community development at this stage. Based on the above literature, most scholars at home and abroad have mentioned two key words when defining the concept of social Q & a community, namely "Q & a" and "social". Therefore, this paper thinks that the social Q & a community is a knowledge sharing and acquisition platform based on Web2.0 technology. In the process of answering and asking questions, users can get the attention of others and pay attention to others, and realize the interaction with other users, so as to establish a community network that meets their own needs.

3. Characteristics of social Q & a community

As mentioned above, social Q & a community is a new model of online community. It is a re upgrade of traditional online Q & a community and a social networking site with basic functions such as asking and answering. Therefore, social Q & a community integrates the basic characteristics of online Q & a community and social networking sites:

3.1 Agglomeration

Online community is formed by users' similar interests, the same brand or common purpose. For example, virtual brand community is a social interaction platform formed by enterprises, brand lovers or third parties with brand as the core theme [10]; open innovation community is an online community formed by users to spread innovative thinking [11]; as a type of online community, social Q & a community is also a topic and question that users are interested in using and choosing And the public knowledge platform formed by agglomeration [12]. Therefore, social Q & a community has the characteristics of agglomeration. It is precisely because the social Q & a community has the characteristics of agglomeration that the community users have the basic power of sustainable use.

3.2 Decentralization

Social Q & a community is a knowledge sharing and acquisition platform based on Web2.0 technology, and decentralization is the most obvious feature of Web2.0 technology. Social Q & a community is not centered on a certain user, but each user in the community is an equal subject, who is not only the creator of knowledge information, but also the receiver of knowledge information [13]. The equality and dual functions of individual users in the community also make the social Q & a community present the characteristics of centralization.

3.3 Interactivity

The biggest difference from the traditional way of communication is that the Internet has a unique gene of interactivity, and social Q & a community, as one of the latest forms of Internet development, is also endowed with the characteristics of interactivity [14]. Questioning and answering is the most basic functional form of social Q & a community. Users can communicate and interact with other users in the process of questioning and answering, which also ensures the sustainability of community operation. Therefore, the interactivity of social Q & a community is an important guarantee for the long life of the community.

3.4 Sociality

It has been shown that the social Q & a community is the upgrade of the traditional online Q & a community, which pays more attention to the social function of the community. Many scholars hold

similar views. Xu Jianming and others [15] think that social Q & a community is the second stage of online Q & a community, which is mainly social; Guo Shunli [16] also think that social Q & a community inherits the basic Q & A, keyword search and other functions of traditional online community, and develops the social function of traditional online Q & a community; therefore, sociality is social Q & a community The district is different from the biggest characteristics of the previous Q & a community. The sociality of social Q & a community reflects that users are no longer limited to acquiring and contributing knowledge in the community, but also need to find and pay long-term attention to users with similar backgrounds or hobbies in the process of community participation, so as to form a community relationship network that meets their own needs.

3.5 Knowledge

Social Q & a community is a knowledge-based service community based on questions and topics [17]. It uses questions and topics as the carrier to achieve the community purpose of disseminating knowledge, which requires that the knowledge provided by users should be professional and referential. In fact, Zhihu has set a high entry threshold in its initial stage, and most of the users invited are authoritative people in various fields. These users have unique opinions and deep research on their respective fields. Although Zhihu has opened the entry threshold now, it still encourages users to contribute professional knowledge, such as giving professional certification according to the quality of their knowledge And so on. No matter in the initial stage or now, Zhihu has taken various measures to ensure the knowledge of the community, so as to achieve the purpose of spreading knowledge in the community.

4. Research status of social Q & a community

Table 1 shows the research status of social Q & a community at home and abroad.

Table 1: Research status of social Q & A community

Research classification	research contents
Platform	Platform operation and communication mechanism [12] [19] [20], comparison of different community platforms [21] [22] [23] [24] [25]
technology	Page design [28] [29] [30], communication subject [31], system design [29] [32]
problem	Question classification [33] [34], question recommendation [35] [36]
answer	Answer characteristics [37] [38] [40], answer quality [41] [42] [43]
user	User identification [44] [45], user motivation [46] [47] [48] [49], user behavior [50] [51]

4.1 Taking the platform as the research center

Domestic and foreign scholars' research on community platform mainly focuses on the platform operation and communication mechanism and the comparison of different community platforms [18]. The research on the platform operation and communication mechanism mainly discusses the operation principle and communication process of the community platform. For example, Lin Zhen et al. [19] deeply studies the operation principle and communication mechanism of Zhihu, baidu Xinzhi and other social Q & A communities, and finds that the social Q & a community disseminates information based on the Q & a quality, users' interests and topics concerned by users; Li Sheng [12]]On the basis of Lin Zhen's research results, according to the change of operation and communication mechanism of social Q & a community, this paper analyzes Zhihu's development mode and development strategy, and provides strategic suggestions for the operation and communication mechanism of the largest Chinese social Q & a community from three perspectives of communication, product development and content. Ma Qingqing [20] takes Zhihu, the largest Chinese social Q & a community, as the research object, and analyzes the communication mechanism and discourse space of Zhihu respectively. For the research on the comparison of different community platforms, Fichman [21] compared the content quality provided by four social Q & a communities from the three dimensions of whether the content of content analysis method is complete, whether the content is accurate and whether the content can be verified, and found that there are obvious differences; Chua and other [22-23] scholars compared three Chinese social Q & A communities and three English Q & A communities First of all, he compared the two kinds of social Q & A communities from the three dimensions of content quality, content organization and system usability. Then he compared the two kinds of social Q & A communities from the four aspects of content

quality, response speed, information popularity and interface usability Both Chinese and English social Q & A communities have the problems of low system availability and low content quality. Jia Jia [24-25] compares the content quality of social Q & a community "Zhihu" with traditional online Q & a community "Baidu Zhihu" based on the research results of Zhu [26] and others on the content quality evaluation dimension of Q & a community, and finds the content provided by Zhihu The quality is higher than Baidu knows, which also reveals why the social Q & a community is booming now, while the traditional online Q & a community is declining gradually.

4.2 Taking technology as the research center

Technology is the support for the establishment of social Q & a platform [27]. The existing research mainly focuses on the community page design, communication subject and system design. In the research of page design, rust [28] took page design as the influencing factor of community users' attitude and behavior; bhattacher et al. [29] found that the clarity of the page will affect the number of visits of social Q & a community users; Wu Dan et al. [30] also found that the design of the interface has an impact on the visits of social Q & a community users. For the research on communication subject, Bao Zhuo [31] analyzed the communication subject of Zhihu, the largest Chinese social Q & a community, based on the six dimensional space theory proposed by Stanley Milgram. He found that the balance between senior users and general users of Zhihu was low, so he thought that Zhihu should pay attention to the balance of different types of users in the future development process. On the research of system design, the research of bhattacher et al. [29] shows that the convenience of using the system in social Q & a community is the influencing factor of the number of user visits; Li Xiaoming et al. [32] studied and classified the system design of many social Q & A communities at home and abroad. He found that the existing social Q & A communities were built based on the features of structured data, free text, and question answering matching.

4.3 Focus on problems

The users of social Q & a community carry out community activities around questions and topics, so community problems are also the research hotspot at this stage, and the research on social Q & a community problems mainly focuses on the classification of questions and the recommendation of questions. Social Q & a community produces various types of questions every day, so many scholars at home and abroad have studied the classification of questions. For example, Pomerantz [33] proposed rhetorical analysis based on rhetorical theory to achieve a relatively complete classification of social Q & a community questions; Lei et al. [34] used machine learning algorithm classifier to achieve the classification of questions through the vocabulary and semantic features of the questions. The primary purpose of realizing the optimal classification of social Q & a community questions is to better match and accurately recommend them to community users. Zhou et al. [35] independently developed a question recommendation system and used it to well match "question" and "person"; Chen et al. [36] first studied the basic principle of automatic label system, and then used this system to analyze the collected Q & A papers After that, he used these tags to identify the individual preference and authority of "people". Finally, he built a multi-source hybrid tag library according to these tags.

4.4 Focus on answers

User's answer and discussion to questions and topics is another important community participation behavior in social Q & a community, and the quality of user's answer affects the sustainable development of the community. Therefore, the existing scholars have carried out specific research on users' answers, including the research on the characteristics and quality of answers. For the research on the characteristics of answers, scholars mostly analyze the specific characteristics of the answers generated by community users in the process of behavior from the perspective of answering questions and discussing topics. For example, Savolainen [37-38] first found that the quality and credibility of the answers obtained by users using refutation and mixed discussion mode were high, then he analyzed the characteristics of the answers based on Borchers [39], and the results showed that the answers described by reason results and authoritative rhetoric were more convincing; Wei et al. [40] analyzed the answers in question answering community, and their research results were as follows It is found that questions and subject types lead to different characteristics of answers. In the research of answer quality, Fu et al. [41] used stack High quality answers of four representative knowledge domains of exchange test 23 data standards and 24 data features extracted. The research shows that the information standards, users and review features of the community are stable in measurement, while the importance of user standards and data features is

uncertain for measurement in different fields; domestic scholar Jiang Nan et al. [42] put forward the following suggestions The questioner's satisfaction with the answer is regarded as the indication of high quality of the answer, and based on this, we further study the factors that affect the quality of the answer; Shen Hongzhou et al. [43] found that the number of content tags, text length and emotional tendency of the user's answer will affect the quality of the answer.

4.5 User centered research

Users are the main body of social Q & a community, and they play two roles in the community: questioner and responder. How to make users ask questions in the community and how to make users contribute both in quantity and quality are the issues that community operators are concerned about. Through literature reading, the author found that most scholars at home and abroad study users from the perspectives of user identification, user motivation and user behavior. In terms of user identification, Zheng [44] and others used the media system dependency (MSD) theory to explore the driving factors of the dependency relationship between active users and potential users, and their research provided the latecomers with an understanding of the differences in motivation and emotional reaction between the two; Chen Juan [45] and other scholars used hierarchical clustering method to subdivide user types according to the collected personal data of known users, and through the analysis of user characteristics, they found that the most effective way to identify users is to identify the users Finally, the collected users are divided into information search users, expert users and self-learning users. For the research of user motivation, Fang et al. [46] studied the motivation of users' continuous participation in the community based on the theory of planned behavior, and the final research showed that users' social commitment, common language and vision motivation had a positive impact on users' continuous participation; Bao et al. [47] explored the internal mechanism of driving users to participate in the community based on the theory of social cognition, and found the conclusion of users through empirical research Results expectation, self-efficacy, specialty perception and similarity perception are the motivational factors that affect the user's community participation behavior; Zhang Haitao et al. [48] used grounded theory analysis method to get the research results that the five motivational factors of resources, satisfaction, learning motivation, individual characteristics and emotional needs affect the transformation of low contribution users to high contribution users; Zhou Shang [49] Based on the three dimensions of social capital The results show that social interaction, community identity, knowledge reciprocity, shared vision and perceived similarity are the motivations that affect users' knowledge contribution in the community. In the aspect of user behavior research, Chen [50] and other scholars established a sequential opinion influence framework on the basis of content information, and used this framework to track the user's opinion behavior; Kang Xiaopu [51] independently constructed a circular neural network (RNN) model to track and predict the user's answer behavior from the user's questions.

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