

Research on the Experience Design of Chinese Knowledge Sharing in the Information Age

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Abstract. This paper is aimed to present the development process and status quo of knowledge sharing in the Internet age in China, and explore and analyze the factors which have an effect on knowledge sharing. By means of in-depth interview and questionnaire, purposes, behavior modes, and emotional experience of users on different knowledge sharing platforms were found. This paper also conducts an analysis for competitive products in view of five products of knowledge sharing in China, and explores the development process and the status quo of existing products of knowledge sharing in the Internet age in China. The experience design model of knowledge sharing is further created, and the selection of knowledge sharing platforms is discussed in this paper.

Keywords: Information age · Knowledge sharing · Experience design

1 Introduction

In the information age, knowledge extensively exists in every domain of the society, but individuals can only master a limited amount of data, information, and knowledge. In order to obtain and make use of knowledge while realize the value of knowledge, we need to consider knowledge sharing as the core task.

China has been a knowledge-learning advocator for long. Confucius says, “One should be fond of learning and not feel ashamed to ask and learn from his inferiors”, which is a true saying respected by modern Chinese. Nowadays, the Internet channels of knowledge sharing include Baidu baike, Weibo, WeChat, Zhihu, and Fenda. In view of different website types, for example, Baidu zhidao is a platform operating in an instant question-and-answer form while Zhihu expects to help its users find better answers with correlated communities. For the operation aspect, besides the content itself, the great importance is increasingly given to copyright and benefit mechanisms. When it comes to interaction forms, based on the text, more forms such as pictures, voice, and videos have been developed. Under the background of sharing economy, it is significant to study design strategies and methods of knowledge sharing in order to deepen and develop the knowledge and customize the user experience for knowledge sharing platforms.

2 Background

2.1 Knowledge Sharing

Knowledge is now being seen as the most important strategic resource in organizations, and the management of this knowledge is considered critical to organizational success [1]. Knowledge sharing is an important part of knowledge management trilogy (knowledge creation, knowledge sharing, knowledge application) [2]. There is growing realization that knowledge sharing is critical to knowledge creation, organizational learning, and performance achievement [3]. As one knowledge-centered activity, knowledge sharing is the fundamental means [4]. Knowledge can be considered either tacit or explicit [5]. Information is “a flow of messages” whereas knowledge is based on information and justified by one’s belief. All information is considered knowledge but knowledge is more than just information, i.e., knowledge includes information and know-how.

Studies suggesting that individuals are predisposed to certain work attitudes and behaviors [6]. There are many factors that affect knowledge sharing. The major factors that influence knowledge sharing between individuals in organizations: the nature of knowledge, motivation to share, opportunities to share, and the culture of the work environment [3]. We also found that social network and shared goals directly influenced the attitude and subjective norm about knowledge sharing and indirectly influenced the intention to share knowledge. Knowledge sharing is a communication and interaction process. Unlike products, it cannot be delivered freely. Upon sharing the knowledge of other people, reconstruction behavior is a must, and one is required to have a certain knowledge base to learn and share knowledge [7].

2.2 Internet-Involved Knowledge Sharing

The field of knowledge sharing has traditionally been dominated by information technology and technology-driven perspectives [8, 9].

In the second half of the 20th century, the emergence of the Internet had had a huge impact on human civilization, as significant as the discovery of a new continent. Gradually, a number of changes took place in the human society with regard to its organization and operation modes. In 1990, a research institute of the United Nations put forward the concept of knowledge economy, which clearly defined the nature of the new economy. In 1996, Organization for Economic Co-operation and Development named it as “knowledge-based economy”, which is the first time to introduce the index system and measurement into the new economy. With the continuous development of the Internet and new media technologies, the network has become the most rapid and popular communication medium. Features of the Internet meet the demands of knowledge communication. Sharing knowledge on the Internet can not only effectively speed up the communication, but also enable the network users with the same interests to get together and form virtual communities on the website via knowledge sharing. As a result, various online communities of knowledge sharing sprang up. The gathered community members can both share knowledge and create new value with the shared

knowledge. The mechanism of Internet-involved knowledge sharing is “acting not only as a medium for sharing technical knowledge, but as a place where one can seek advice, gather opinions, and satisfy one’s curiosity about a countless number of things [10].” People share professional knowledge, various experiences, or daily recommendations on the websites. With the web 2.0 being popular and online Q-and-A communities emerging, the online information has been communicated bidirectionally other than been transferred in one way. Users are developed into the active creator of knowledge from the passive receiver of knowledge. Knowledge was no longer exclusively provided by professionals, but is now generated by the co-participation and creation of users. Network users are playing a role of creator, provider, and even communicator of knowledge rather than just receiver. Online communities used to be focused on the carried content on the websites, but now turn to users and pay more attention to social network relations derived from interpersonal connection, so that all sorts of virtual communities have been established.

Internet-involved knowledge sharing provides us with a network consisting of node paths, sharers, correlation mechanism, and value relations between them, which is of vital importance for knowledge sharing and communication behavior. Therefore, in order to do further research on knowledge sharing and communication behavior of knowledge sharing platforms, our concerns need to be centered on the purposes, behavior, and experience of participants, and also the content construction, copyright mechanism, interaction modes and other factors of products. The structural features of its networks can be better studied upon the exploration and analysis for the interaction relations based on the related theories in experience design.

3 Research Method

As knowledge sharing has increasingly become one of the important behaviors in people’s daily life, the users’ sharing behavior is driven by the corresponding value obtained from knowledge sharing. In order to know the status quo of knowledge sharing in China, the researchers conducted investigations for users and an analysis for competitive products, which is centered on people’s motivations to use different platforms, as well as the differences of knowledge content and interactive design between each platform.

3.1 User Survey

By means of user survey combined with literature review and ethnographic research, the researchers studied and analyzed the factors which influence the occurrence of users’ knowledge sharing. The user survey was conducted in four steps: user selection, user interview, questionnaire, and information arrangement. Based on the said steps, observation method was adopted so as to find users’ behaviors varied according to knowledge sharing platforms during the using process.

Survey. A survey of 10 users through persona analyze by the in-depth interview and a five-person focus group. Our target users consist of students, housewives, and white

collar workers. The in-depth interview lasted for about half an hour, in which these users were required to describe the complete process of using knowledge platforms, including the using condition, the platform selection based on different purposes, and the way to obtain/share knowledge. Then, they were provided with several prepared conditions and asked to illustrate how they would conduct knowledge sharing in these cases. For the focus group, the researchers displayed some typical problems and demands gathered from the in-depth interviews, and came up with some design proposals. Through these steps, the selections, requirements, behaviors, and psychological motivations of the users were known. Knowledge sharing involves a set of behaviors that aid the exchange of acquired knowledge.

Questionnaire. In order to obtain the opinions on knowledge sharing in a wider range, a questionnaire survey covered 100 people was conducted to verify the universality of the opinions acquired from the interview and the focus group.

3.2 Analysis for Competitive Products

Five knowledge sharing products in China are discussed in the paper to explore the development process and the status quo of the existing products of knowledge sharing in the Internet age in China. The advantages and disadvantages are discovered based on the results of the in-depth interview and questionnaires. What's more, the researchers also compare and analyze the existing platforms in China and present the development history and the status quo of knowledge sharing in China.

3.3 The Status Quo of Knowledge Sharing

This part mainly presents using motivations, behaviors, and feelings of users, seizes the most important tags of users, and classifies them according to categories based on the five most frequently used platforms including Baidu zhidao, Weibo, WeChat, Zhihu, and Fenda. In view of website types, for example, Baidu zhidao is a platform operated in the question-and-answer form while Zhihu expects to help its users find better answers with correlated communities. For the operation aspect, besides the content itself, the great influence are increasingly given to copyright and benefit mechanisms. For interaction forms, based on the text, more forms such as pictures, voice, and videos have been developed. We focused on both the user side and product side (Tables 1 and 2).

Baidu Zhidao. Baidu, with its popular slogan “Baidu it, and you’ll know”, dominates the search market with a considerable position in China. Baidu zhidao has been developed for such a long time with abundant accumulation, and a large amount of knowledge content generated by users has been collected, which is easy to be obtained via Baidu search engine. In most cases, if you search for questions on the Baidu, Baidu will give priority to the results searched in Baidu zhidao at the very top. For users, they use Baidu zhidao with a very clear purpose, which is knowing the answer in a simple and rapid way, and leave the page without more deep and systematic understanding of the related complex background knowledge about the questions. Therefore, their behaviors are conducted in a direct way that they firstly simplify the questions into

Table 1. The user side

Platform	Motivation	Behavior	Experience
Baidu zhidao	Specific questions and quick leaving with speedy answers	1. Search the similar questions 2. Obtain the related answers	Fast and convenient
Weibo	Obtaining more experience, related information without clear purposes, and highlighting the timeliness of information	1. Follow the verified celebrities; 2. Browse the information; 3. View the comments	Entertaining
WeChat	Obtaining the response of friends around	Send the moments wait for replies	Omnipotent moments and social relationship
Zhihu	Obtaining in-depth knowledge	1. Search the similar questions; 2. Obtain the answers from different perspectives	Professional and objective
Fenda	1. Obtaining knowledge of some specific persons; 2. Entertainment	1. Ask questions; 2. Answered by real persons	Strong interaction and real-person experience

Table 2. The product side

Platform	Position	Scenario	Similarity	Difference
Baidu zhidao	AQ-and-A interactive platform of knowledge sharing based on search	Questions are matched by search engine. Too detailed questions cannot be matched	Data-Information-Knowledge	From results searching to pages o related question Instant question-and-answer mode
Weibo	A platform of information sharing, communication, and obtainment based on user relationships	Real-time hot topics are displayed		Social contact; Publicity; An update in form of text within 140 Chinese characters (including punctuations) and real-time sharing Unidirectional and bidirectional following mechanisms Timeliness and randomness Convenient and speedy sharing of information
WeChat	Instant messaging service on intelligent terminal	Friends in the moments can answer the questions		Social contact; Privacy; Bidirectional adding mechanism; Design for mobile terminals; Official accounts + Moments; WeChat intelligent life; "Intelligent" living style; Connecting anything Question-and-answer mode; Copyright mechanism;
Zhihu	Authentic online community of questions and answers	Correlated communities are built to help users for better answers		Sharing professional knowledge experience, and opinions with each other; Answers are ranked according to the votes while invalid answers are hidden, by which to some extent great deal of useless information has been screened
Fenda	Pay answers in voice	Answer a question in one minute		Voice interaction; Profit mechanism: the question owner, the answerer, the eavesdropper; Cashable knowledge and skills; Various stars, and famous persons in different fields such as health care, financial management, and workplace; Create online celebrities of knowledge

several keywords and search the similar questions already being asked by others, rather than describe the complete questions. As a matter of fact, such answers they obtain also similar ones related to their personal questions. Although the questions are not asked by themselves, in most cases, the related answers are sufficient for solving their own questions, which provides a kind of convenient and fast user experience.

Weibo. The users of Weibo have no specific purposes for the knowledge content of knowledge sharing and pay attention to the topics and other users that they are interested in. The random knowledge content is sent by whom they follow. They themselves fail to have strong control force upon the obtained content, but through following the topics they are interested in after a longstanding screening, the obtained content is basically consistent with their loves and interests. Moreover, the content of Weibo was limited in 140 characters previously for a long time, and therefore the published content is also constrained, and usually about a single message. However, Weibo features comments. Users from various fields and with different knowledge backgrounds can give their comments in Weibo. The message can be highly expanded via these comments, and a knowledge system is established based on the comment content and message itself. Many people describe the phenomenon with humorous words that “information second, comments first.” The users of Weibo obtain knowledge for entertainment in more cases, and highlight the timeliness of information.

WeChat. WeChat is a closed social platform, on which the WeChat friends are mostly intimate family members and close friends. When the users of WeChat are confronted with any problem, especially related to their life, they will send their problems in the Moments and wait for the answers. Thus, Moments is also called “omnipotent Moments”. In most cases, users send their current problems are not actually for the knowledge to solve the problems, but for letting their friends know they are in troubles and need comfort, for strengthening their own sense of presence, or sometimes even for showing off by means of asking for help. For example, “I am going to attend a meet-and-greet of my idol and suddenly feeling nervous now. Could you please tell me what I can ask my idol, my omnipotent Moments?”.

Zhihu. The users of Zhihu give more importance to the answers received on the platform and the knowledge sharers, who are basically well-educated with higher education backgrounds than those of many other platforms. The shared content is more objective and systematic while the knowledge sharers prefer to prove the objectivity of their opinion in virtue of literature and documents, and to share knowledge based on theories, practices, and experience with as less subjective assumptions and speculation as possible. In the information shared on Zhihu, the most valuable part is the experience sharing of their true life and the inspiration obtained from their own experience rather than the mere sharing of knowledge. On Zhihu, users are responsible for the information, comments, and discussion they post, and premise their behaviors on the belief that “my behaviors may affect the judgement of the newcomers”.

Fenda. The users of Fenda pay more attention to the knowledge subjectivity, in other words, the source of knowledge. When they want to know the opinions of those hard-to-reach celebrities and popular figures on a certain question, they can ask on Fenda. When a question are submitted to a specific answerer, the answerer can answer

the question in voice. The answerers of Fenda include various stars, and famous persons in different fields such as health care, financial management, and workplace, which is aimed to create online celebrities of knowledge.

4 Results and Discussions

4.1 Experience Design Model Building for Knowledge Sharing

As the exploration for knowledge sharing has reached the actual implementation from the theoretical study, how can knowledge sharing play a part in user experience has already become the research focus. By means of user survey and analysis for competitive products, the researchers matched and correlated users and products for comparison and analysis and found the regularity in the influence upon knowledge sharing experience. For the further research on the factors in knowledge sharing system, classification as well as extraction and induction, which influence the occurrence of knowledge sharing, this paper brings sharing contents, motivations, and behaviors into a unified system. The researchers built an experience design model of knowledge sharing, which includes three layers: content layer (data, information, and knowledge), motivation layer (personal, technical, incentive, and trust factors), and behavior layer (knowledge search and transfer) (Fig. 1). With an experience design model of knowledge sharing, the experience of users in the knowledge sharing process can be understood, and therefore people can know how to optimize the knowledge sharing platforms from the perspective of experience design.

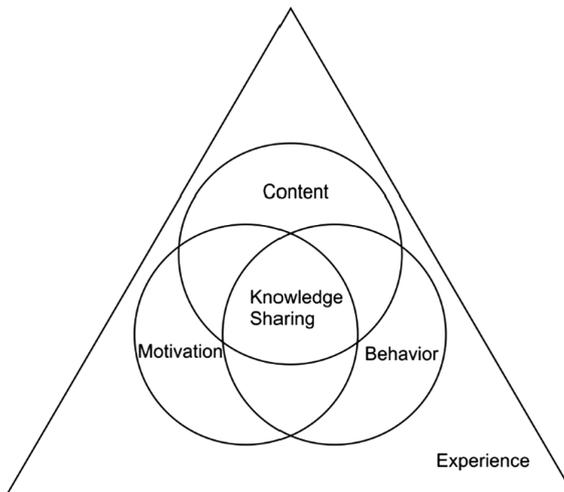


Fig. 1. Knowledge sharing model

Content Layer. Amidon once put forward a knowledge classification structure, called “information system” or “information pyramid” [11], in which the data, information, and knowledge are brought into a layered system with a pyramid shape (Fig. 2). We make analyses, give judgements, and take actions in our favor based on knowledge, which further constitutes human intelligence. On knowledge sharing platforms in the Internet, every concept in the knowledge classification structure has its own specific meaning. Data refers to a number, character string, image, or voice which has no specific background and meaning. Taking the topic “Today in the previous history” on Weibo as an example, for users, the dates without any specific background are simple and meaningless numbers. Data mining means find potential and useful information and knowledge in mass original data, such as concepts, rules, restrictions, modes, and constraints. Information refers to formatting, filtered, and integrated data used for displaying and explaining the results, which illustrates the relation between data. For example, “Today in the previous history” on Weibo can refer to the date of a certain historical event. Knowledge refers to meaningful information, manifested in the relations between data. For example, the users of Weibo can discuss a certain historical event itself under the topic “Today in the previous history”, and further extend to the background, figures, process, significance, and evaluation of the event.

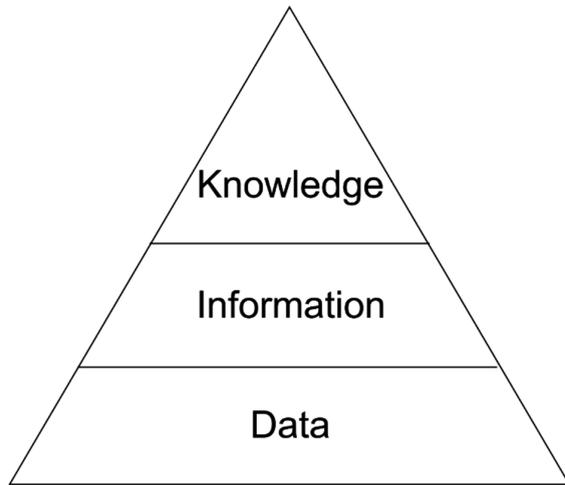


Fig. 2. Knowledge pyramid

Motivation Layer. From the user survey, it can be found that motivations of users on knowledge sharing platforms are varied. However, there are four widespread types of motivations including information search, social contact, value stimulation, and entertainment. Information search: The most essential driving force of knowledge sharing is the obtainment of knowledge and information, which is the common ground of the five said knowledge sharing platforms. Social contact: In the studied platforms, Weibo and WeChat are two knowledge sharing products featured with sociality based

on social relations. Wherein Weibo shares knowledge based on weak relations, while WeChat based on strong relations. Value stimulation: Knowledge sharing needs the knowledge owner to share their knowledge, and therefore certain value is required by the group (knowledge owners) for stimulating the occurrence of knowledge sharing. Stimulating measures on the said platforms include virtual titles, actual money, and value exchange. For example, Fenda supports the question owner pays to the answerer and after that if other users want to know the answer, they can also pay for the answer. Entertainment: As the knowledge sharing purpose has been achieved, entertaining modes can better promote the occurrence of knowledge sharing and the sustainable development. For instance, Weibo allows its users to make comments with images, which is effective, convenient, and interesting.

Behavior Layer. Knowledge search and transfer are two important behaviors of users in knowledge sharing. The two behaviors can be found in the developing process of the content layer of “data – information – knowledge”. Firstly, users find the data they are interested in, then form the key information, and finally correlate the information to be user knowledge. The knowledge search and transfer behaviors are varied according to platforms. For instance, Baidu zhidao makes users simplify the questions into several key words, search the existing questions related to their questions, and quickly leave the page without detailed reading. In the Moments of WeChat, users describe their questions in detail with natural language and wait for their friends’ answers. On Zhihu, users read carefully, and profoundly know the background, system, and method of knowledge.

4.2 Factors Influencing the Selection of Knowledge Sharing Platforms

Upon knowledge sharing, users’ selection of knowledge sharing platforms is influenced by factors from various aspects.

One important factors upon users’ selection is based on the different purposes for obtaining knowledge and their acquaintance of the platforms. The relationship between platforms and users matters. Some users have been accustomed to a certain platform for the long-term use, and then their old habits may restrict their selections psychologically. For part of the users, especially the elder ones, they seldom change a new platform unless the current one cannot meet their requirements, which results in the lacking knowledge of other products, and influence users’ selections in return.

On the other hand, users’ selections of the knowledge sharing platforms is based on the result of self-evaluation. Another reason for selecting a certain media put forward by Wilbur Schramm is as follows: “Formula of selection = Expected return value/Required efforts”. The first level means before using a certain platform, the user wonders whether the medium can meet his requirements, that is, the expected return value. The second level means users tend to achieve the same or more satisfaction with less efforts. However, it is a process merely in mind for fast evaluation, which is evidently without any strict and rational calculation.

Users’ selection may also be influenced by other users. A certain kind of environment created by other people will influence one’s behavior. If one has been

recommended by a user of a certain platform, and his friends around are the users of the platform, he is likely to use the platform once recommended by those friends.

These factors are varied according to users. However, it is necessary for knowledge sharing platforms to know about the factors, because users will make selections among the knowledge sharing platforms and transfer from one to another to ensure knowledge is available at need. Platforms are also required to expand their influence in order to make certain that users know where to find the knowledge they need.

5 Conclusion and Future Works

By means of content, motivations, and behaviors sharing, knowledge sharing explores and makes full use of the existing knowledge of human beings, plays a role as the lever, and promotes the creation and application of new knowledge. With the help of knowledge sharing, human beings establish shared libraries with abundant knowledge resources and come up with new technologies and methods so as to provide source power for social innovation. The cooperation and exchange as well as discussion upon knowledge between individuals can enlarge the value of knowledge in use and generate new knowledge. In this regard, knowledge sharing can be regarded as the core of innovation system. The researchers collect and present the practical methods and routes in knowledge sharing in the Internet age in China, analyze the factors influencing the occurrence of knowledge sharing, and build an experience design model, which will give guidance to the future design practice of knowledge sharing. For realizing the value of knowledge, knowledge sharing plays an essential role. However, in the actual application process, the false information, wrong “knowledge”, privacy disclosure, and advertorials frequently occur on the knowledge sharing platforms, which brings negative social effects to knowledge sharing. Therefore, it is challenging in the future to ensure that users can obtain correct knowledge and improve users’ ability to screen the knowledge.

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