A Case Study: Behavior Study of Chinese Users on the Internet and Mobile Internet

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Abstract. With the fast-paced development of the Chinese internet environment, people have learned to use the internet, and recently, the mobile internet. Users grown up in such an environment will have different interests, ways and reasons of using, and information needs. In order to obtain a better understanding on Chinese internet and mobile internet user behavior and examine the differences among the age groups of 20s, 30s, and 40s, an ethnographic study was conducted in Xi'an, China. This paper is a case study illustrating the various user behaviors on the internet and mobile internet for different age groups of people.

Keywords: Internet, Mobile Internet, User Behavior, Chinese, Ethnography.

1 Introduction

In China, most people came in contact with the internet in the late 90s. Later, the internet industry increased dramatically during the years 2004-2008. In the past two to three years, the mobile internet has surfaced to the spotlight. According to CNNIC, China's internet users have grown exponentially, and by the end of 2009, the number of internet users had reached 384 million. China became the nation with the most internet users in the world, in which 346 million users accessed the internet through broadband while 233 million users connected to the internet through cell phones.

Along with the growth of internet and mobile internet industry, the internet has become a part of daily life for Chinese people of all ages, from young children to retired elders. Within such a diverse population of internet users, the age group of 20 to 29 covers the highest percentage, 66.3%. This age group of users grew up in the internet era and thus most of them heavily rely on the internet. They are also the earliest adopters of the mobile internet. Most of these users are currently college students, who all frequently use their cell phones to surf the internet.

Due to the widespread availability of cell phones and computers, users can conveniently access the internet at any time and any place. As a result, users are extending their behavior of using traditional internet to the mobile internet. Therefore, their behavior in using mobile internet is definitely correlated to their behavior in using the traditional internet.

To better comprehend the user behavior on the internet and mobile internet, we initiated a user research study in Xi'an, China. The first step of this analysis is focused on the behavior for different age groups of users. When they access the internet, what are they interested in? What kind of information do they seek in both internet and mobile internet?

2   Methodology

According to the best practice suggested by Kuniavsky [1], the research plan was drafted to collect information to validate research hypothesis. The research plan consists of ethnographic interviewing and web surveys. Ethnographic interviews were first conducted in Xi'an to address the above questions. Afterwards, a web survey on customer concerned issues was administered as the second step of the research. This paper focuses on the first step.

Users were recruited in Xi'an and had used the intertnet for at least 5 years. It was vital that we found study participants that fit the profiles of our targeted users to ensure they represent the needs and behaviors of real users. We chose people who were born after 1960, 1970, 1980, and 1990, to form different age groups each with 5-6 users. In China, due to economic development, people born in different times have some unique social behaviors. We would like to see how this would impact on their behavior on internet/mobile internet.

In order to have diversified users, we set up the screening based on their education or professional background. The table below indicated the various types of users that joined in the interview study.

Table 1. Demographical Information of Users Participating in Study

Age Group (years old)	40-50	30-40	20-30	<20
Total Number	4	5	6	4
With MS Degree	1	1	2	
With BS Degree	1	2	2	2
College level	2	2	2	2
Male	2	3	3	2
Female	2	2	3	2

The interview questions were related to human needs. It was an extended study on human needs for internet/mobile internet. According to Maslow's hierarchy of needs, the human needs can be described as below.
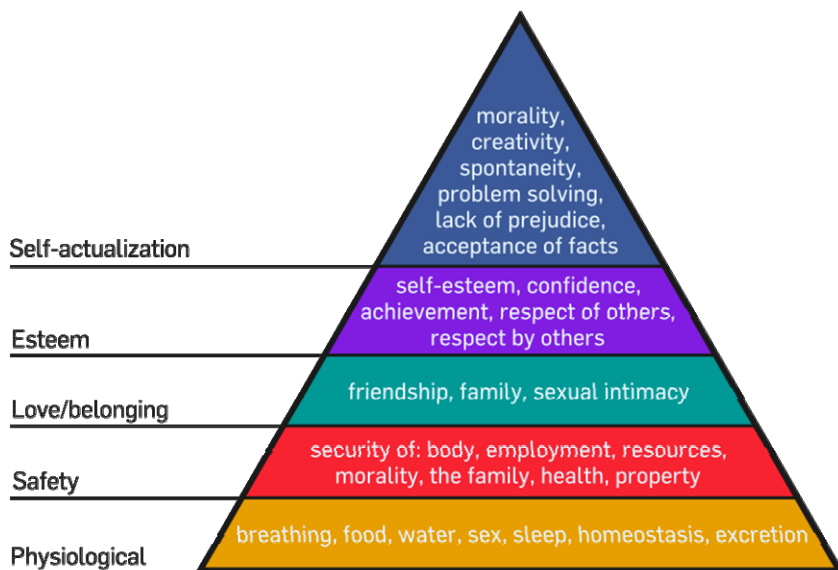
Fig. 1. Maslow Hierarchy of Needs [2]

Human needs are a powerful resource of explanation of human behavior and social interaction [3]. To understand user behavior on the internet and mobile internet, the human needs in the internet era should be studied. The interview questions investigated how users solved problems through the internet/mobile internet, what kinds of problems they've faced, and their needs in daily life, emotion, spirit, culture and communication, etc. To make sure the information we obtained were true, all the interviewees voluntarily participated the study and signed consent forms. We also chose comfortable and relaxing environments familiar to participants, such as restaurants or their homes and offices.

3   Findings

In this paper, the findings were only based on the first stage of the study, the ethnographic interview in Xi'an. The investigation included documenting the typical user behavior, especially their reactions to the problems that occurred to them, and their strategic and tactical approaches when using the internet/mobile internet. Through the interview, we could create the user need framework. From different types of user interests, we will be able to set up a further survey to research more on user internet/mobile internet behavior.

Based on Maslow's Hierarchy of Needs, we studied the extended needs related to communication, psychology, art, culture, new technology, education, career planning,

food safety, medical and other life resource, etc. To overview the topics that interviewees were concerned about, we summarized it in the following list.

Table 2. Topics Discussed Relating to Human Needs in the Study

Needs	Topics
Physiological	1. With the mass migration of people from the countryside to cities during China's economy growth, many people are disconnected in the cities. Therefore, they use the internet to obtain information on necessities such as renting homes and finding jobs. 2. Making comparisons over the internet to find things with good quality and cheap prices
Safety	1. Communication is critical for people within society. 2. Many people born after 1980 frequently change jobs. They do not know how to select their careers and face changes during the financial crisis. 3. Working Pressure: Many people's life styles were centered between two points, where they worked and where they lived. There is insufficient spare time for entertainment, exercise, shopping, socializing, etc. 4. Low Living Standards: People are concerned with the rising cost of living and basic livelihood, such as food, homes, etc. 5. Environment and Ecosystem: People worry about the deteriorating environment due to pollutions and rapid population growth. 6. Food Safety: Cases of counterfeit or bad food prompt many people to search the internet for food safety issues, methods, and experiences. 7. Health/Well-Being: Due to the inconvenience of health care in China, many people search and obtain medical information through the internet.
Love/Belonging	1. Many people have troubles with child education. They don't know how to better communicate with their kids. 2. People born after 1980 moved to the first tier cities to work and live, due to the job opportunities and city resources. They have less or no time to talk to their family. 3. Filial Duties: With the aging of society, many young people found that they were unable to support their parents. 4. Dating and Marriage: Limited time and working pressure causes issues for dating, getting married, or sustaining the marriage.

Table 2. (*Continued*)

Esteem	1. People are impacted by expectations of different social groups. 2. People are pressued by the needs to be recognized by family members, peers, boss, and even strangers. 3. Competition: People wish to win in the virtual life (internet gaming) or real life.
Self-Actualization	1. Different culture background and tradition would have different culture needs. The knowledge of liberal arts would influence on the human behavior. The instinct sensory also impacted on human needs. 2. With the internet growth, technology brought users convenience, but also brought users different types of questions.

From the needs listed above, the major needs that users talked about were in the second category of human needs. Based on the interview results, we can use another way to summarize Maslow's human needs. The new user need framework is drawn below. A higher percentage means a greater number of people mentioned these issues.
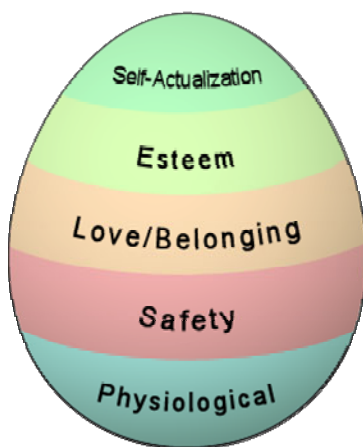
Fig. 2. Human Needs Framework

In general, internet/mobile internet users are more concerned with category 2-4, instead of Maslow's triangle structure. Within these internet/mobile internet users, what are differences between the age groups?

3.1 Age Group between 40-50

This group of users received diversified education because of China's economic development. Those with college level education use the internet to view news and

financial information, communicate through email, and work with office software to improve productivity. However, a majority of them use landline phones or cell phones to talk to people instead of using IM, texting, chat, etc. Apart from a small portion with higher education, this group was quite similar when using the internet, compared with the age groups of 30's and 20's.

The main reasons to use the internet are:

- Accessing Information
    - browse news or financial information
    - not intensive users, but only visit choice familiar websites
- Communication
    - communication is very conservative
    - inclination towards traditional communication tools
    - communicate within a small circle of friends
    - does not use internet to expand social network
- Health
    - pay attention to health issues
    - use internet to research about diseases and prevention
- Continuing Education
    - challenged by new web products
    - use the internet to learn web terminology and applications
- Entertainment
    - repeatedly play just a few games, during spare time
    - unwilling to test new games

3.2 Age Group between 30-40

These are the users that benefit from the internet, although they are not the mainstream of users. They use the internet to improve their productivities. They are the most practical users, always seeking answers to detailed questions regarding problems in daily life.

The main reasons to use the internet are:

- Accessing Information:
    - read current events
    - ask practical questions on forums
- Communication
    - exchange personal experience, such as child education and taking care of elder parents
    - like to discuss ideas with people of similar background or experience
- Health
    - acquire information about diseases, treatments, and prevention
    - tendency to look at health problems of people around them
- Continuing Education
    - familiarize with newest web activities and terminology to avoid being left behind
    - eager to learn micro knowledge though random times

- Entertainment
  - use the internet to relax
  - play games to enrich their lives

3.3 Age Group between 20-30

People of this age group are the mainstream users for internet and mobile internet. The influence of the internet can be found in every aspect of their routine life. They use the internet to support their work, maintain their social network, answer their questions, and solve their worldy issues.

The main reasons to use the internet are:

- Accessing Information
  - view suggestions and review before purchasing online
  - check out the newest fashion
  - compare online products
- Communication
  - discuss with friends for opinion and recommendation on fashion, products, etc.
  - regularly connects with internet friends
  - use mobile device to follow micro blogs and forum threads
- Health
  - suffers from psychological pressure from the society, such as the unbalanced economic development, surging house prices, marriage problems, career planning, etc.
  - seeks relief and escape from reality through internet
- Food Safety
  - inquire for information on nutritious diet
- Continuing Education
  - yearn to travel abroad for further education
  - search online for famous schools and their classes in North America, Europe, etc.
  - hope to arrange education for their young children
- Career Planning
  - understand how to select their career
  - adapt to changes due to financial crisis
  - desire advice from knowledgeable and accomplished people
  - browse job offering websites and information related to the enterprise
- Dating and Marriage
  - meet people online through dating and matchmaking websites
  - use internet to understand issues related to dating and marriage
- Entertainment
  - use mobile devices to read micro novels and play games
  - surf websites to watch movies, television shows, etc.
  - download songs and follow famous celebrities

3.4   Age Group under 20

People under the age of twenty are the discovery users for the internet and mobile internet. They prefer to be unique, by decorating their personal space in the internet, listening to popular music, and doing things their own way. They worship individuality, distinctive personalities, and are extremely addicted to the internet and mobile internet, often online whenever they can.

The main reasons to use the internet are:

- Accessing Information
  - gather information for their education and finding answers because they are unwilling to read books
  - shopping online
- Communication
  - constantly conversing with friends about everything and anything
  - show off possessions to internet friends
  - uses cell phones to communicate with friends and follow internet trends
- Education:
  - skilled with all new media and applications
  - familiar with many types of technology
- Entertainment
  - play many online games as pastimes
  - listen to music through websites and mobile device
  - fond of watching videos online

4   Conclusion

In the internet era, human needs have moved towards a higher level than before. People are more concerned with things relating to the scope of safety and love/belonging. Between these two categories, different age groups of internet/mobile internet users have different methods of using the internet/mobile internet, as well as distinctive focused interests and objectives. There are several possible reasons that may contribute the variance, such as society development, influence of popular applications in the market during different times, education levels, and amount of time spent on the internet and mobile internet, etc. Further progression of this study will include conducting a survey to verify the interview results and to explicit more on the possible reasons for the difference.

The study of user behavior on the internet and mobile internet is not only about a user research, but also about an innovative design for mobile internet products. With the increasing of internet speed and availability of powerful smartphones, mobile internet is fusing into users' life. Mobile internet users come from the internet users, which may lead their different user behavior in using the mobile internet, due to the different age groups. However, from the interview results, the majority of mobile internet users were under 30 years old. As the most adaptive and discovery users, they have similar behaviors, such as chatting, accessing quick information, and playing

games through their mobile devices. With the pervasiveness of smart-phones, people from different age groups will join the mobile internet market, which will require a further study as the diversified users pool into the mobile internet market.

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