China Internet Network Information Center

The 36th Statistical Report on Internet Development in China

July 2015

中国互联网络信息中心（CNNIC）

Chinese-language website for the report: 互联网报告.中国

Preface

In 1997 China's state competent departments authorized China Internet Network Information Center (CNNIC) to organize relevant Internet entities to jointly carry out an Internet development survey. Ever since then, CNNIC has published 35 statistical reports on Internet development in China, and this report is the 36th report. Internet has become a key sector that affects the development of our society and economy and changes people's lifestyle. All the reports of CNNIC have witnessed the whole development process of China's soaring Internet industry. With precise and objective data, the reports provide a significant basis for government departments and companies to master the development of Internet in China and make relevant decisions. Therefore, they have attracted a lot of attention from all aspects of society and have been cited widely both at home and abroad.

Since 1998, CNNIC has been issuing the Statistical Report on Internet Development in China every January and July by convention. Adopting basically the same content arrangement and writing style as previous reports, the 36th report gives a continued research on netizen population, structural features, access means, network applications, and other Internet-related aspects in China.

Data collection in this annual Report also received great support from the government, enterprises and all walks of life. All surveys went on smoothly and data collection of basic resources was completed in time in close cooperation with other Internet organizations, survey websites and media. We hereby express our sincere gratitude to all people who have given help. Meanwhile, we would like to extend our sincere thanks to Internet users who have participated in our 36th statistical survey on Internet development.

CNNIC
July 2015

Contents

Abstract

1. Basic Information

◇ As of the end of June 2015 China had 668 million Internet users, with an increase of 18.94 million in 6 months. The Internet penetration reached 48.8%, up 0.9 percentage point over the end of 2014.

◇ As of the end of June 2015 the number of mobile Internet users in China reached 594 million, a half-year increase of 36.79 million. Mobile netizens accounted for 88.9% of the total netizen population, while this percentage was 85.8% at the end of 2014.

◇ As of the end of June 2015 Chinese rural netizens accounted for 27.9% of the national total, reaching 186 million, up by 8 million in six months.

◇ As of the end of June 2015 the proportion of Chinese netizens using desktops or laptops to access the Internet was 68.4% and 42.5% respectively. The utilization ratio of using mobile phones as a means to access the Internet was 3.1 percentage points more than that at the end of 2014, reaching 88.9%. The utilization ratio of using tablet PC as a means to access the Internet fell to 33.7%, down 1.1 percentage points in 6 months, and this percentage was 16.0% for network TV.

◇ As of the end of June 2015 China had a total of 22.31 million domain names, of which 54.9% or 12.25 million were ended with ".CN", and 260, 000 were suffixed with ".中国".

◇ As of the end of June 2015 China had a total of 3.57 million websites, of which 1.63 million were under ".CN".

2. Trends and Features

Overall growth of the Chinese netizen population continued to slow down, yet rural netizen population increased due to the popularization of mobile phones as a means to access the Internet

Up to June 2015 China had 668 million netizens and its Internet penetration was 48.8%, up 0.9 percentage point over the end of 2014, showing a slower increase in overall netizen population. In the first half of 2015 China had 18.94 million new netizens, of whom 48.0% were rural netizens. This ratio was 20 percentage points bigger than the proportion of total rural netizens in national total netizens. 69.2% of the new rural netizens use mobile phones to get online. So, in the years to come, mobile phones will remain a key force that drives the growth of rural netizen population.

Mobile netizens continued to maintain a good momentum of growth and mobile phones were becoming an increasingly important means to access the Internet

Up to June 2015 China had 594 million mobile netizens, a growth of 36.79 million over the end of 2014. In all the Internet users, the proportion of those using mobile phones to access the

Internet rose from 85.8% to 88.9% in six months. A decline was seen in the proportion of Chinese netizens using desktops, laptops or tablet PCs to access the Internet. With the enlargement of mobile phone screens and the improvement of mobile application experience, the trend of mobile phones becoming the main Internet terminal of netizens is more and more obvious.

Mobile commercial applications were developing rapidly, giving impetus to consumer-driven economic growth

With the development of mobile Internet technology and the popularization of smart phones, netizens' consumption behaviors are increasingly concentrated on the mobile terminal. Instant and convenient, the characteristics of mobile terminals better suit netizens' consumption needs. With the rapid growth of mobile Internet users, mobile commercial applications have become a new engine to drive economic development. In the first half of 2015, the user scale of mobile payment, mobile shopping and mobile travel booking was respectively 267 million, 270 million and 168 million, a half-year increase of 26.9%, 14.5% and 25.0%.

Internet applications were more and more oriented toward enhancing user experience and boosting economic development

Chinese netizens' Internet application has gone through a process from quantitative change to qualitative change. The qualitative change is represented by the fact that information is more accurate and Internet applications are more oriented toward economic development. On the one hand, technical means are adopted to make information services more accurately targeted to achieve the purpose of developing and maintaining users. On the other hand, Internet applications including online shopping, online travel booking and other forms of online consumption are increasingly integrated into and promote social and economic development. At the same time, new changes in the economic situation are affecting the use of online banking and online stock speculation.

Chapter I Introduction

I. Survey Methodology

(I) Survey on Individual Internet Users

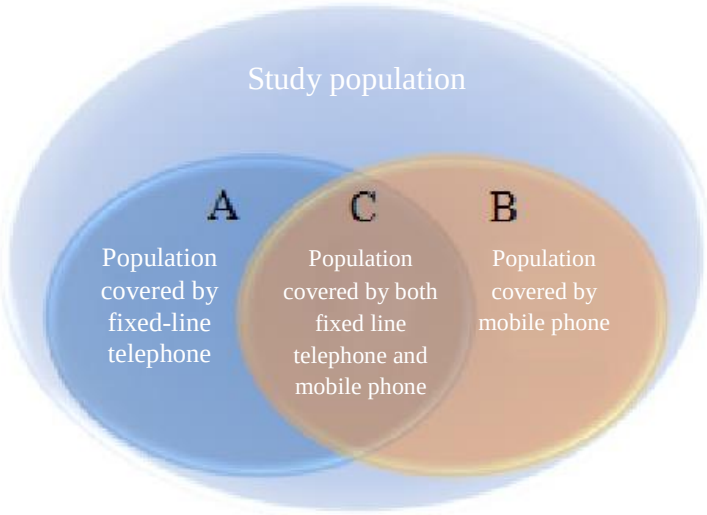
1.1 Survey Population

Permanent residents at the age of 6 or above who have fixed-line telephones (including home phones, personal handphone systems and dormitory telephones) or mobile phones

◇ Sample size

There were 30,000 survey samples in total, including 15,000 for fixed-line telephones and another 15,000 for mobile phones, covering 31 provinces, autonomous regions and municipalities directly under the Central Government in Mainland China.

◇ Division of survey population



The survey population can be divided into three categories:

Subpopulation A:Survey subpopulation using fixed-line telephones (including residents with home phones, PHS users, students with dormitory telephones, and other users with dormitory telephones);

Subpopulation B:Survey subpopulation with mobile phones;

Subpopulation C:Survey subpopulation with both fixed-line telephones and mobile phones (there is an overlap between subpopulation A and subpopulation B, and the overlapped part is subpopulation C), C=A∩B.

1.2 Sampling Method

CNNIC surveys subpopulation A, B and C. Double sampling is adopted for the survey so as to cover more Internet users. The first sampling frame is subpopulation A, the people with fixed-line telephones. The second sampling frame is subpopulation B, the people with mobile phones.

For the survey population with fixed-line telephones, stratified two-stage sampling is adopted. To ensure the sufficient representativeness of samples, the whole country is divided into 31 tiers according to the province, autonomous region and municipality directly under the central government and the sampling is made independently at each tier.

The self-weighted sampling method is adopted for each province. The sample sizes are allocated for each district, city and prefecture (including the governed districts and counties) in accordance with the proportion of the people at the age of 6 or above in the city covered by fixed-line telephones in the total population covered in the whole province.

Sampling in subpopulation B is the similar to that in subpopulation A. The whole country is divided into 31 tiers according to the provinces, autonomous regions and municipalities directly under the central government, and sampling is made independently in each tier. Samples are allocated in accordance with the proportion of the residents in each district or city to make the sample allocation in each province conform to the self-weighting method.

To ensure that the probability for residential fixed-line telephones to be taken as samples is basically the same for all districts, cities and prefectures, that is, bureau numbers covering more residential telephones are more likely to be sampled, and to ensure the operability of investigation work, sampling of residential telephones in each district, city and prefecture is conducted by following the procedures below:

For mobile phone user groups, all mobile bureau numbers in each district, city and prefecture are sampled; a certain quantity of 4-digit random numbers are generated according to the effective sample size randomly in combination with the valid sample size in each district, city or prefecture, and then combined with the mobile phone numbers in each district, city or prefecture to form a number library (local number + the random 4-digit number); randomly order the number library; dial and visit the randomly ordered number library. Survey of the subpopulation with fixed-line telephones is similar to that of the subpopulation with mobile phones:a random number is generated to form a telephone number with the local number, and then these numbers are dialed and visited. To avoid repeated sampling, only the people with fixed-line telephones are visited.

1.3 Survey Methodology

The computer-assisted telephone interviewing (CATI) system is adopted for the survey.

1.4 Differences between Survey Population and Targeted Population

A study for the population who are not covered by telephones in 2005 by CNNIC shows that Internet users are very few in this subpopulation. Currently, the subpopulation is downsizing gradually with the development of our telecom industry. In this survey, there is an assumption, i.e.

Internet users who are not covered by fixed-line telephones or mobile phones are negligible.

(II) Online Survey

Online survey focuses on the use of typical Internet applications. CNNIC conducted an online survey from June 10 to June 30, 2015. The questionnaire is on the CNNIC website, and the links are available on government media websites and major websites of China. Internet users voluntarily participated in and filled out the questionnaire. After the questionnaires were returned,

their validity was verified and invalid questionnaires were sieved out by means of special techniques.

(III) Automatic Online Search and Data Report

Automatic online search is used to conduct technical statistics about the quantity of domain names and websites, and their geographical distribution. Statistical data for reporting mainly includes the number of IP addresses and international Internet gateway bandwidth.

3.1. Total Number of IP Addresses

The data of IP addresses counted by province come from the IP address databases of Asia-Pacific Network Information Center (APNIC) and CNNIC. Registered data that can clearly distinguish the provinces of the addresses in each database can be added respectively by province to generate data of each province. As address allocation is a dynamic process, the statistical data are only for reference. The Ministry of Industry and Information Technology, as the national competent department of IP addresses, will require China IP address allocation organizations (such as China Telecom) to biannually report the number of IP addresses they own. To ensure the accuracy of IP data, CNNIC will compare and verify APNIC statistical data and the reported data to confirm the final quantity of IP addresses.

3.2. Total Number of Domain Names and Websites in China

Total number of domain names and websites in China can be obtained from:

Number of domain names:The number of domain names with .CN and .中国 comes from CNNIC database; and the number of gTLDs comes from the data released by WebHosting.Info, a domain name statistical agency.

Number of websites:It is worked out by CNNIC according to the list of domain names. The list of domain names with .CN and .中国 comes from the CNNIC database, while the list of gTLDs comes from relevant international domain name registries.

3.3. International Internet Gateway Bandwidth

Through a reporting system, the Ministry of Industry and Information Technology can obtain on a regular basis the total bandwidth of Internet connecting Chinese carriers with other countries and regions. The reported data are included in the Statistical Report on Internet Development in China.

II. Definitions of Terms in the Report

◇ **Internet users:** Chinese residents at the age of six or above who have used the Internet in the past 6 months.

◇ **Mobile Internet users:** Internet users who have used mobile phones to access and surf the Internet in the past 6 months, but not limited to those surfing the Internet via mobile phones only.

◇ **Computer Internet users:** Internet users who have used a computer to access and surf the Internet in the past 6 months, but not limited to those surfing the Internet via computers only.

◇ **Rural Internet users:** Internet users who have been living in rural areas of China in the past 6 months.

◇ **Urban Internet users:** Internet users who have been living in urban areas of China in the past 6 months.

◇ **IP address:** As a basic Internet resource, the IP address functions to indentify online computers, servers and other devices on the Internet. Connection with the Internet can be realized only when an IP address (in any form) is acquired.

◇ **Domain name:** A hierarchical and structural character identifier on the Internet used to identify and locate a computer, corresponding to the Internet Protocol (IP) address of the computer. Domain names at different levels in the Internet domain name system of China may consist of letters (A-Z, a－z, case insensitive), digits (0－9), hyphens (－) or Chinese characters; English domain names at various levels shall be spaced by a solid dot (.), while Chinese domain names at various levels shall be spaced by either a solid dot or a Chinese period (。). Common domain names are divided into two categories:country code top-level domain (ccTLD), such as the domain names ended with ".CN" which represents China; and generic top-level domain (gTLD), such as the domain names ended with ".COM", ".NET" or ".ORG".

◇ **Website:**It refers to the web sites with domain name itself or "WWW. + domain name" as the web address, including the web sites under our top-level domain name ".CN" and gTLD. The registrant of the website is within the territory of P.R.C. For example:for the domain name of "cnnic.cn", it has only one website and the corresponding web address is "cnnic.cn" or "www.cnnic.cn". Other web addresses like "whois.cnnic.cn" and "mail.cnnic.cn" with such domain name as the suffix are regarded as different channels of the website.

◇ **Scope of survey:**Unless otherwise expressly indicated, all the data cited in this Report is only limited to mainland China, excluding Hong Kong, Macao and Taiwan.

◇ **Deadline of survey data:**The deadline of the statistical survey data is June 30, 2015.

Chapter II Scale and Structural Features of Internet Users

I. Scale of Internet Users

(I) Overall Scale of Internet Users

In June 2015 China had 668 million Internet users, with a half-year increase of 18.94 million. The Internet penetration reached 48.8%, up 0.9 percentage point over the end of 2014. Growth of the overall scale of Internet users continued to slow down.

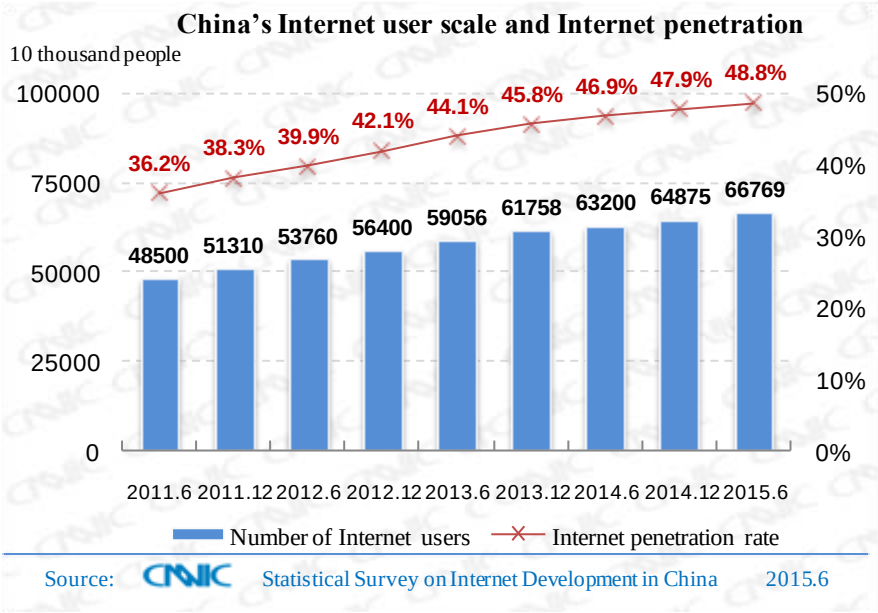


Figure 1 China's Internet user scale and Internet penetration

As the growth of the scale of Internet users is entering a plateau, the influence of the Internet on people's lifestyle is become more profound. Use of the Internet is expanding from personalized applications mainly for information acquisition, communication and entertainment to integrated public services in healthcare, education, transport, public utilities and other areas concerning people's livelihood. With the implementation of the "Internet+" action plan, the Internet will drive transformation and innovation in traditional industries. In the future, driven by cloud computing, the Internet of things and big data application, the Internet will accelerate the transformation and upgrading of agriculture, modern manufacturing and production services, to form a new economic development pattern with the Internet as infrastructure and an implementation tool.

(II) Scale of Mobile Internet Users

In June 2015 China had 594 million mobile Internet users, a half-year increase of 36.79 million. Mobile netizens accounted for 88.9% of the total netizen population, while this percentage was 85.8% at the end of 2014.

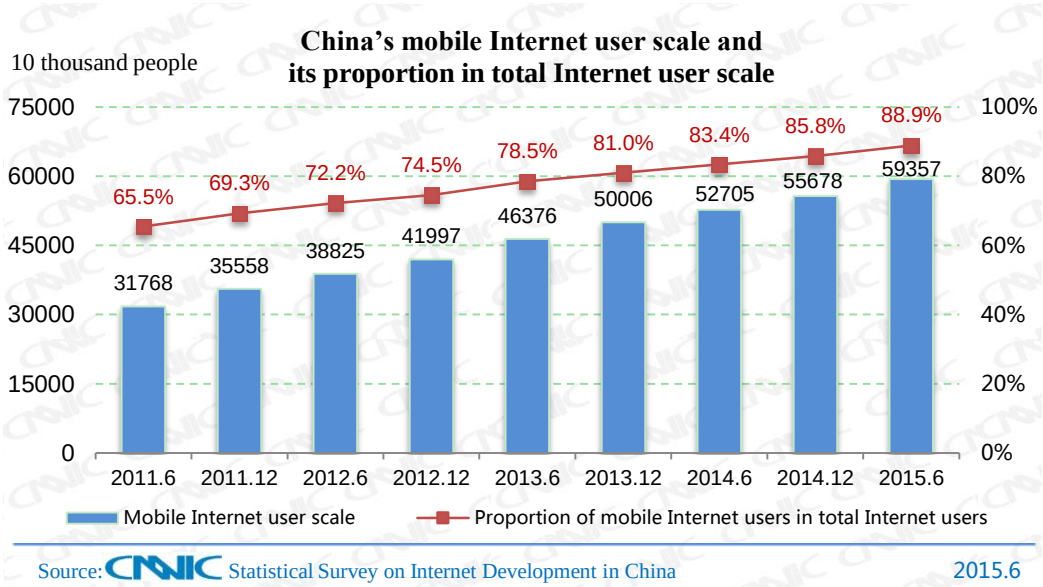


Figure 2 China's mobile Internet user scale and its proportion in total Internet user scale

The scale of mobile Internet users experienced a further growth owing to the joint action of three factors:popularization of mobile Internet devices, improvement of network environment, and diversification of mobile Internet application scenarios.

Firstly, lower prices of smart phones laid the foundation for Mobile Internet application. In the first half of this year, major Internet companies and traditional home appliance manufacturers entered the mobile phone market one after another, leading to a sustained decline in the price of smart phones and thus enhancing people's purchasing power. Secondly, the government intensified its support for the development of mobile Internet, urging operators to lower their tariffs, improve network coverage tooptimize Internet environment and reduce the threshold for mobile Internet access. Finally, diversified mobile Internet application scenarios enhanced netizens' willingness to use the mobile Internet. Accelerated integration of the mobile Internet with traditional industries and development of various life-related new applications have encouraged more and more traditional industrial users to begin to use the mobile Internet.

(III) Scale of Rural Internet Users

In June 2015 Chinese rural netizens accounted for 27.9% of the national total to reach 186 million, up by 8 million in six months.

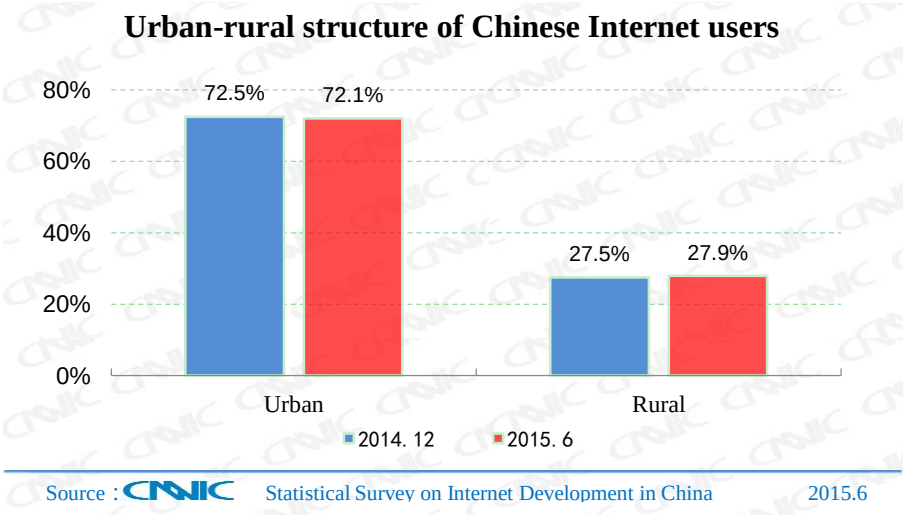


Figure 3 Urban-rural structure of Chinese Internet users

China's Internet penetration is 64.2% in urban areas and 30.1% in rural areas, showing a gap of 34.1 percentage points. For the population group aged 10-40, the Internet penetration in rural residents is 15-27 percentage points lower than in urban residents. Yet, it is not very difficult for this part of rural non-netizens to become netizens in the near future.

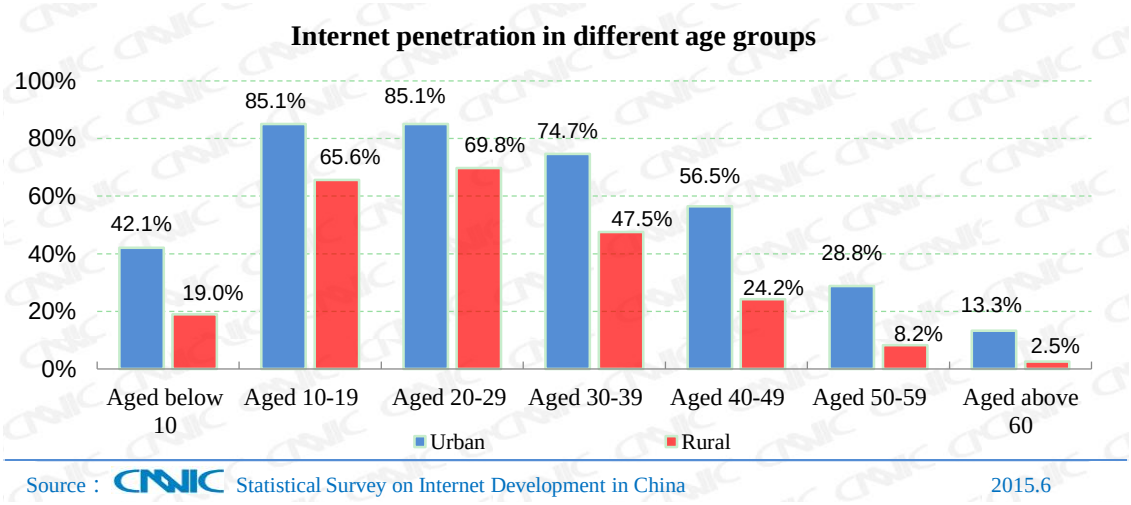


Figure 4 Internet penetration in different age groups

Future development of the Internet in rural areas will be jointly driven by the government and Internet companies. On the one hand, governments at all levels should intensify their policy support for Internet infrastructure construction to enhance rural residents' awareness and use of the Internet. In June 2015 the General Office of the State Council issued the "Opinions on Supporting Migrant Workers Returning Home to Start Business", encouraging migrant laborers to return home to start their own business by combining the resources of labor-outflow regions with the market of labor-inflow areas. In this process, migrant workers may give full play to their advantage of being familiar with both the resources of their hometown and the market of the city where they used to work. With the support of "Internet +" and other information technologies,

they can develop modern commerce to sell the products manufactured in the labor-outflow area to the market of the labor-inflow area, thus promoting Internet development in the rural area. On the other hand, Internet companies should improve the willingness of the rural population to use the Internet by making their applications more suitable for rural needs. So far, some Internet enterprises such as Alibaba, Jingdong and Tencent have launched agriculture-oriented E-business services and rural financial services. These initiatives will boost Internet development in China's rural areas.

II. Attributes of Internet Users

(I) Gender Structure

In June 2015, the male/female ratio of Chinese Internet users was 55.1:44.9, and the proportion of female netizens was up by 1.3 percentage points over the end of 2014.

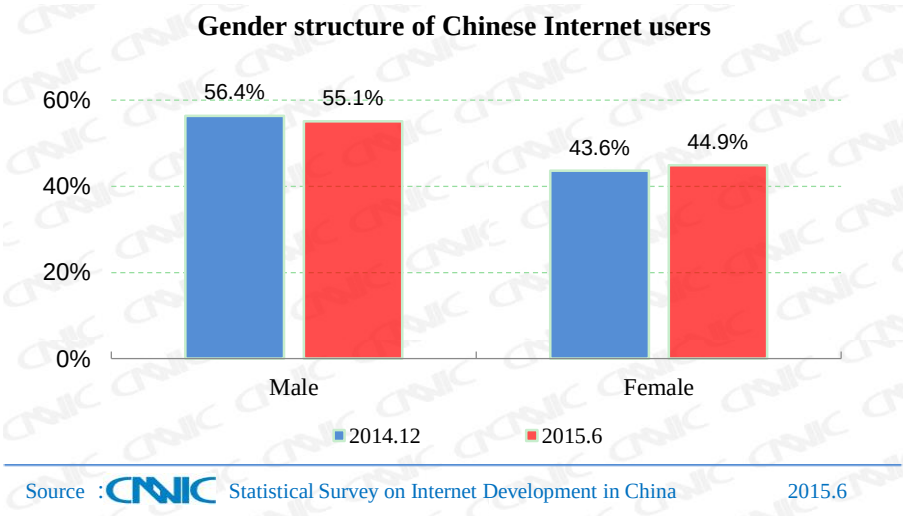


Figure 5 Gender structure of Chinese Internet users

(II) Age Structure

In June 2015, an overwhelming majority (78.4%) of Chinese netizens were aged 10-39. More specifically, Internet users aged 20-29 accounted for 31.4% of the national total, the largest proportion among all age groups. The proportion of Internet users below 20 years of age was up 1.1 percentage points over the end of 2014, suggesting that the Internet continued to penetrate into the younger population.

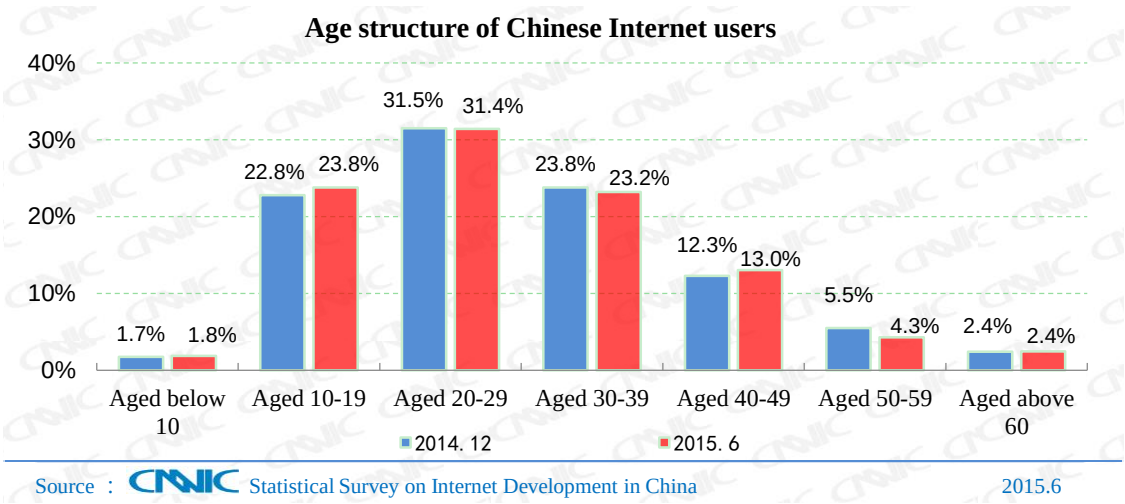


Figure 6 Age structure of Chinese Internet users

(III) Education Structure

In the entire Chinese netizen population as of June 2015, the proportion of Internet users with a primary education level or below was 12.4%, up 1.3 percentage points over the end of 2014. But this percentage was down by 0.8 percentage point for those with a college education level or above, suggesting that the Internet continued to penetrate into low-education-level population groups.

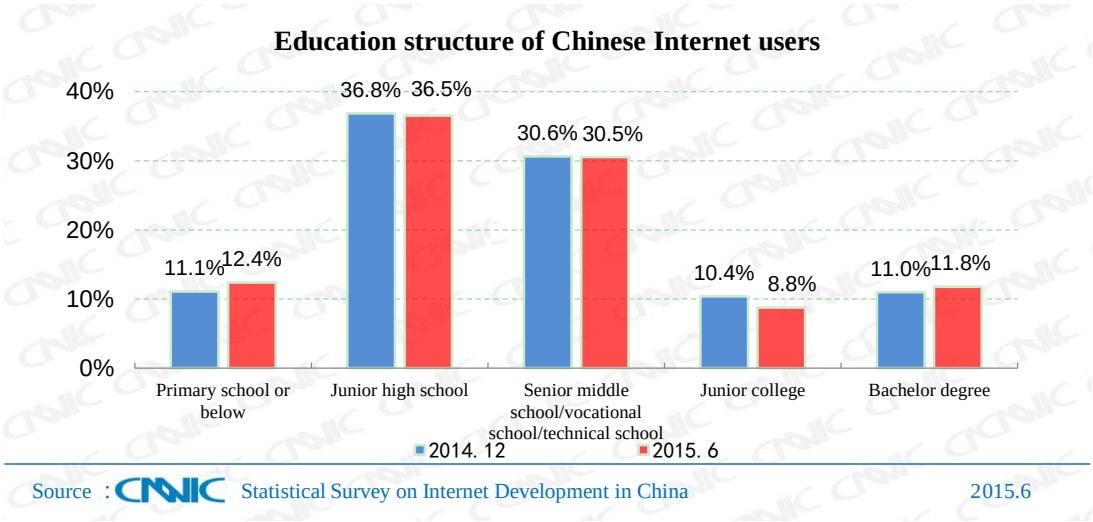


Figure 7 Education structure of Chinese Internet users

(IV) Occupational Structure

As of June, 24.6% of Chinese netizens were middle school students; 22.3% were self-employed persons / freelancers; and 16.3% were company managers and ordinary staff members, indicating that middle school students accounted for the largest part of Chinese netizens if classified by occupation.

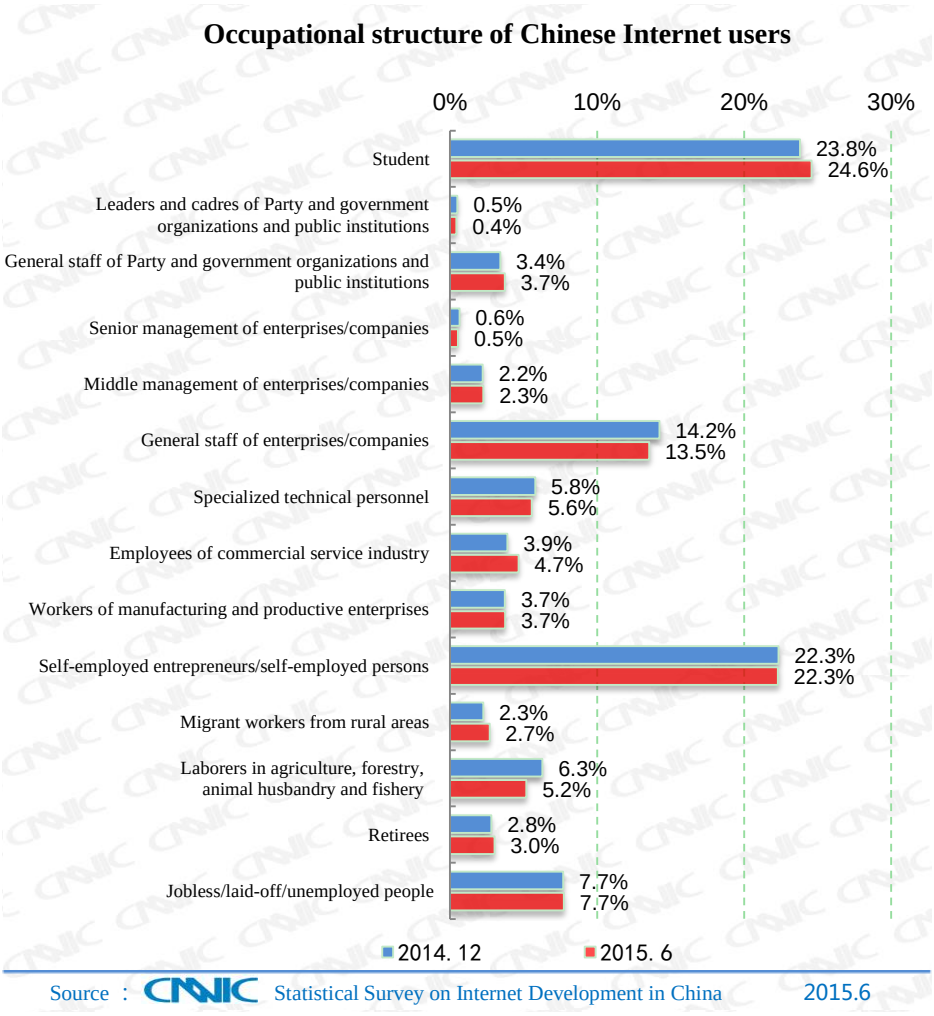


Figure 8 Occupational structure of Chinese Internet users

(V) Income Structure

In June 2015 the proportions of netizens with a monthly income[1] of 2001-3000 and 3001-5000 were respectively 21.0% and 22.4%, the highest among all income groups.

[1]Specifically, the income of students includes living allowances provided by families, salary earned from work-study programs, scholarships and others. The income of peasants includes the living allowances provided by children, income of agricultural production, and government subsidy. The income of those who are jobless, laid off or unemployed includes the living allowances provided by children, government relief and subsidy, pension, and subsistence allowances. The income of retirees includes the living allowances provided by children and pension

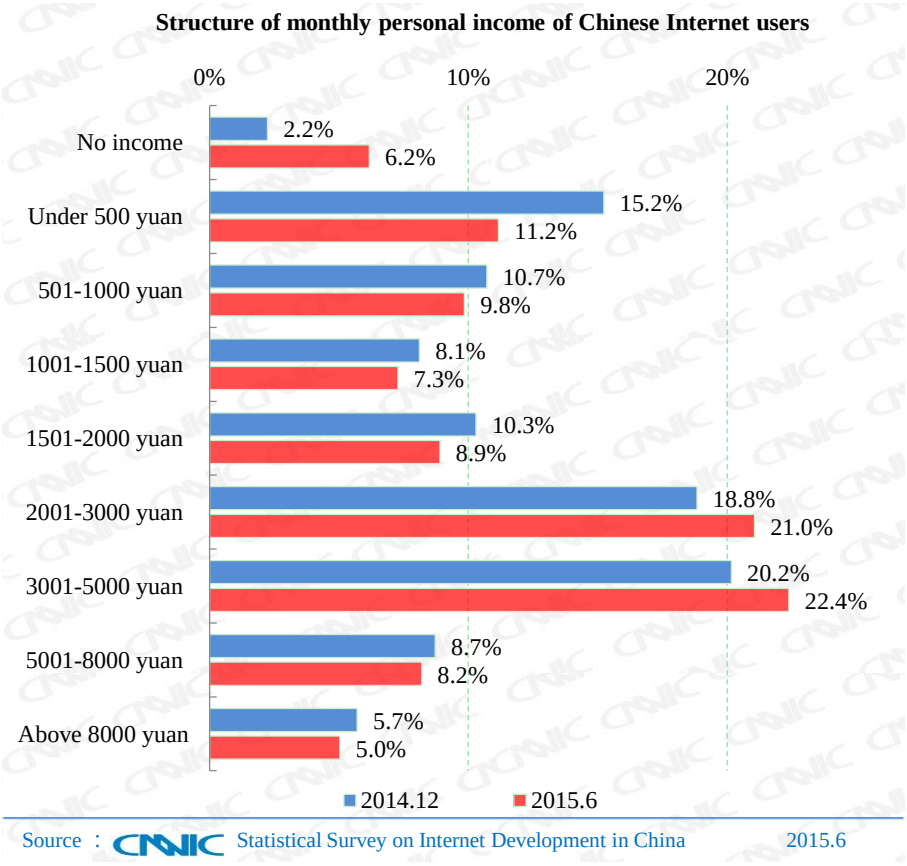


Figure 9 Structure of monthly personal income of Chinese Internet users

III. Modes of Internet Access

(I) Internet Access Equipment

As of June 2015, the proportion of Chinese netizens using mobile phones to access the Internet was 88.9%, up 3.1 percentage points over the end of 2014, showing a sustained growth trend. The proportion of those using desktops/laptops to access the Internet was 68.4%/42.5%, respectively down 2.4 and 0.7 percentage points in 6 months, showing an obvious trend that more and more PC-end Internet users were changing into mobile-end users. In addition, 33.7% of Chinese netizens used Tablet PCs as a means to access the Internet, down 1.1 percentage points from the end of 2014. Enlargement of mobile phone screens and improvement of mobile application experience satisfactorily met mobile netizens' entertainment needs, making tablet PCs less popular than before. Finally, 16.0% of Chinese netizens used network TVs to surf the Internet, basically the same as the situation in December 2014.

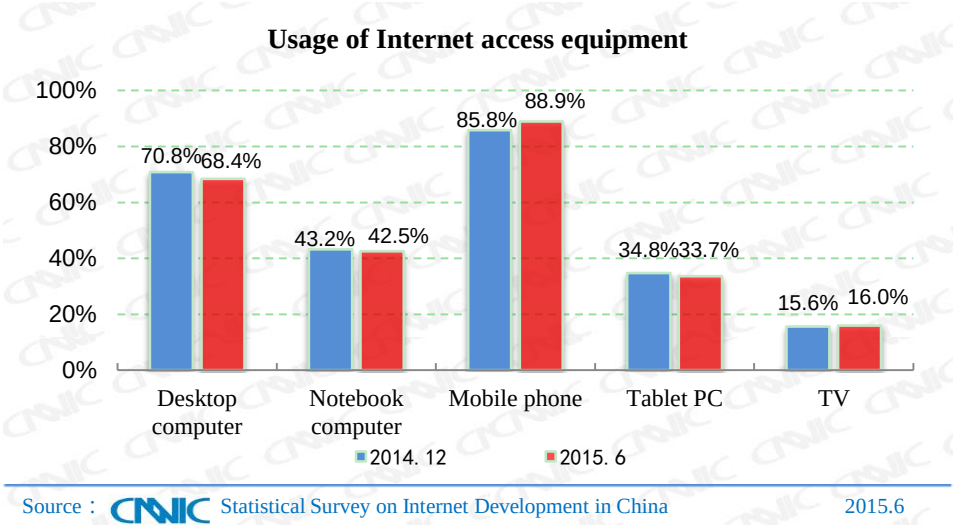


Figure 10 Usage of Internet access equipment

(Ⅱ) Places for Internet Access

As of June 2015, the proportions of netizens who accessed the Internet from home, the Internet bar, school or public places were basically unchanged compared with the situation in December 2014, but the proportion of those who accessed the Internet from the office increased to 33.7%.

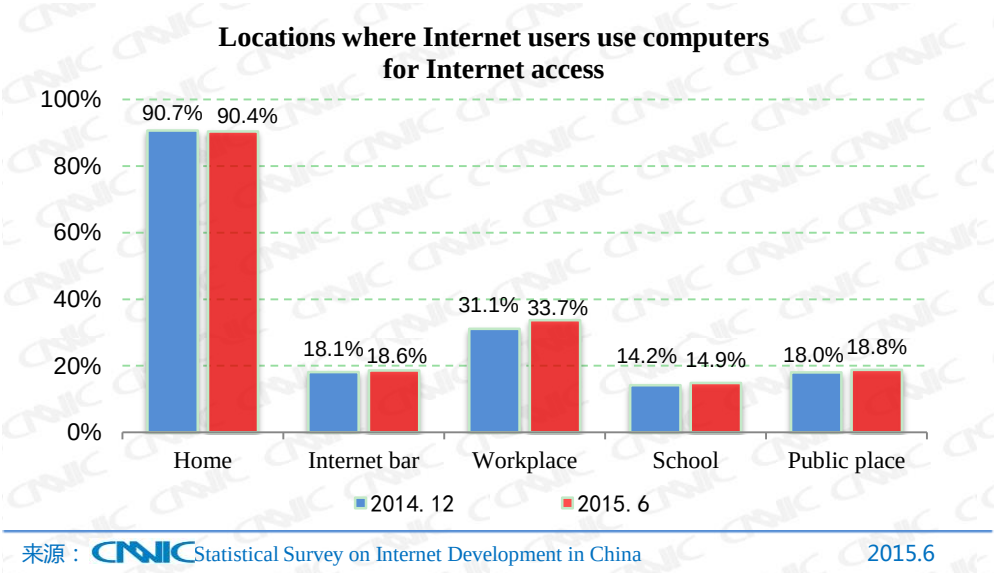


Figure 11 Locations where Internet users use computers for Internet access

(Ⅲ) Access Networks

The construction and upgrading of communications infrastructure, the active promotion of operators, and the demand of netizens for big-traffic mobile applications have jointly promoted

the conversion of 2G users into 3G/4G users in China. As of June this year, 85.7% Chinese mobile Internet users accessed the Internet via 3G/4G networks.

Besides 3G/4G, Wi-Fi has also become one of the main ways of Internet access. In the first half of the year, 83.2% of netizens had the experience of accessing the Internet by means of Wi-Fi, and home Wi-Fi was available for as many as 88.9%. The proportion of netizens using workplace/pubic-place Wi-Fi was 44.6%/42.4%.

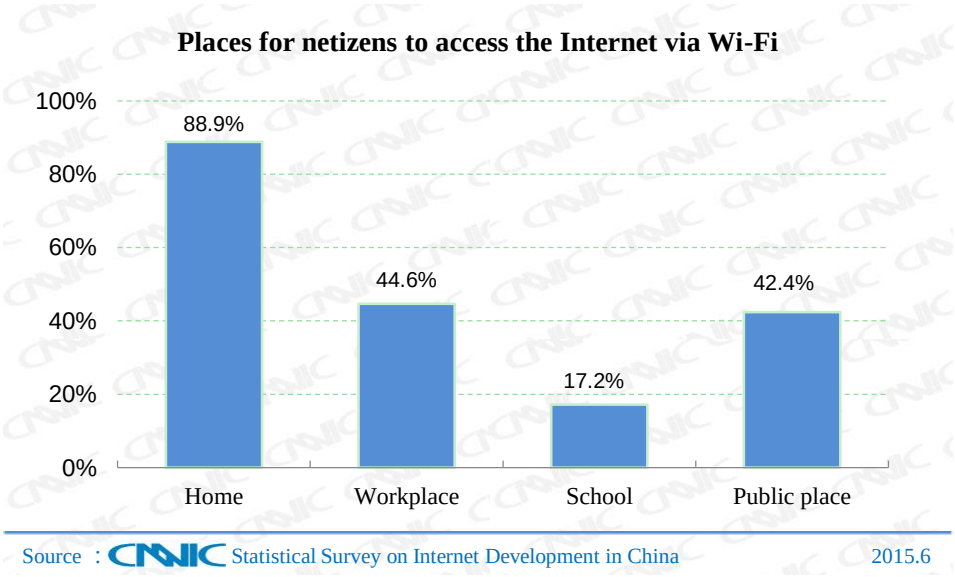


Figure 12 Places for netizens to access the Internet via Wi-Fi

Chapter III Basic Internet Resources

Ⅰ. An Overview of Basic Internet Resources

China had 336 million IPv4 addresses and 19338 blocks /32 of IPv6 addresses as of June 2015.

China had a total of 22.31 million domain names, in which ".CN" domain names saw a half-year increase of 10.5%, reaching 12.25 million and accounting for 54.9% of the national total.

There were altogether 3.57 million websites, a half-year increase of 6.6%, among which 1.63 million were ".CN" websites.

International Internet gateway bandwidth reached 4,717,761 Mbps, up 14.5% in 6 months.

Table 1 Comparison - Basic Internet Resources in China from December 2014 to June 2015

	Dec. 2014	Jun. 2015	Half-year growth	Half-year growth rate
IPv4	331,988,224	335,543,808	3,555,584	1.1%
IPv6 (blocks/32)	18,797	19,338	541	2.9%
Domain names	20,600,526	22,314,992	1,714,466	8.3%
Including ".CN" domain names	11,089,231	12,251,342	1,162,111	10.5%
Websites	3,348,926	3,568,397	219,471	6.6%
Including ".CN" websites	1,582,870	1,626,719	43,849	2.8%
International Internet gateway bandwidth (Mbps)	4,118,663	4,717,761	599,098	14.5%

Ⅱ. IP Address

As of June 2015, the number of IPv6 addresses in China had reached 19,338 blocks /32, a half-year increase of 2.9%.

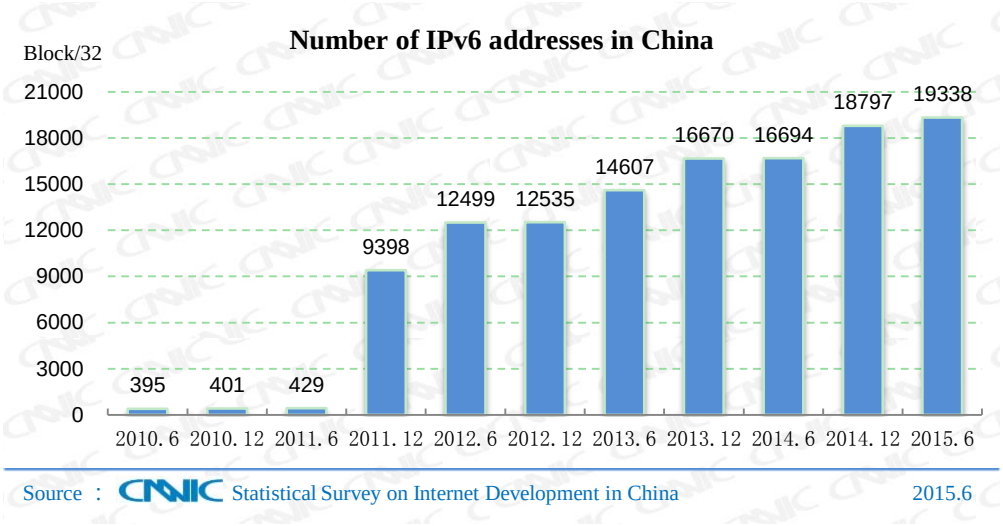


Figure 13 Number of IPv6 addresses in China

All IPv4 addresses in the world had been assigned by the beginning of 2011 and since then the total number of IPv4 addresses in China had been basically stable, being 336 million as of June 2015.

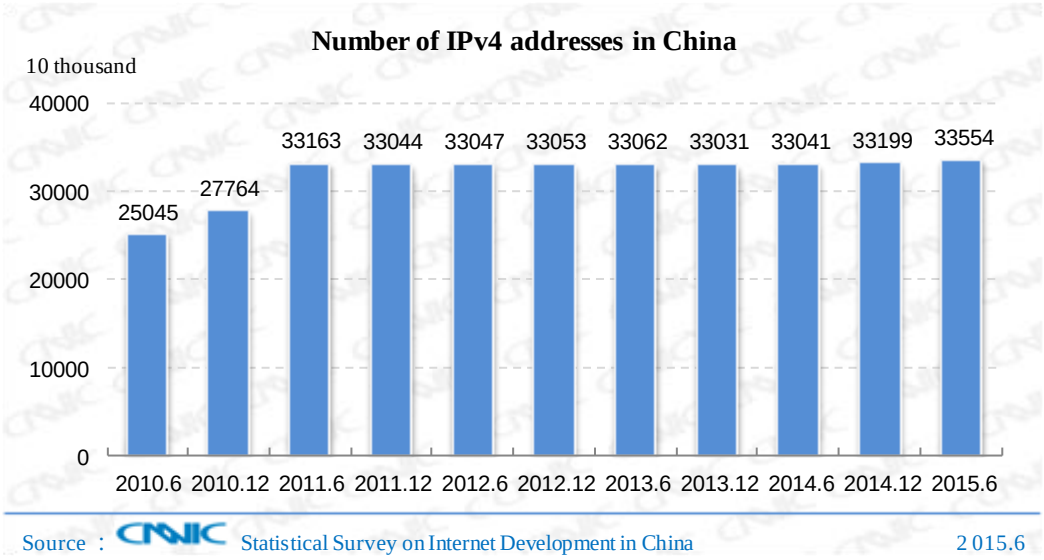


Figure 14 Number of IPv4 addresses in China

III. Domain Name

As of June 2015 China had a total of 22.31 million domain names, up 8.3% in six months. The total number of ".CN" domain names was 12.25 million, a half-year increase of 10.5%, accounting for 54.9% of all domain names of China; ".COM" domain names were 8.42 million, taking up 37.8%; and ".中国" domain names were 260, 000.

Table 2 Number of Domain Names in Each Category[2]

	Number	Proportion in total domain names
CN	12,251,342	54.9%
COM	8,423,954	37.8%
NET	988,761	4.4%
中国	264,309	1.2%
ORG	260,363	1.2%
BIZ	85,853	0.4%
INFO	40,144	0.2%
Others	266	0.0%
Total	22,314,992	100%

Table 3 Number of ".CN" Domain Names in Each Category

	Number	Proportion in total CN domain names
cn	9,310,300	76.0%
com.cn	1,716,956	14.0%
adm.cn	616,780	5.0%
net.cn	326,389	2.7%
ac.cn	129,260	1.1%
org.cn	86,842	0.7%
gov.cn	57,923	0.5%
edu.cn	6,817	0.1%
mil.cn	75	0.0%
Total	12,251,342	100%

Ⅳ. Websites

As of June 2015 China had 3.57 million websites[3] in total, representing a half-year increase of 6.6%.

[2] Note: gTLDs come from the data released by WebHosting.Info (a statistical organ) on July 29.

[3] It refers to the websites whose domain name registrants are within the territory of the P.R.C.

Figure 15 Number of Websites in China

Note:Websites ended with ".EDU.CN" are excluded.

Ⅴ. International Internet Gateway Bandwidth

As of June 2015, China had 4,717,761 Mbps of international Internet gateway bandwidth, up 14.5% in half a year.

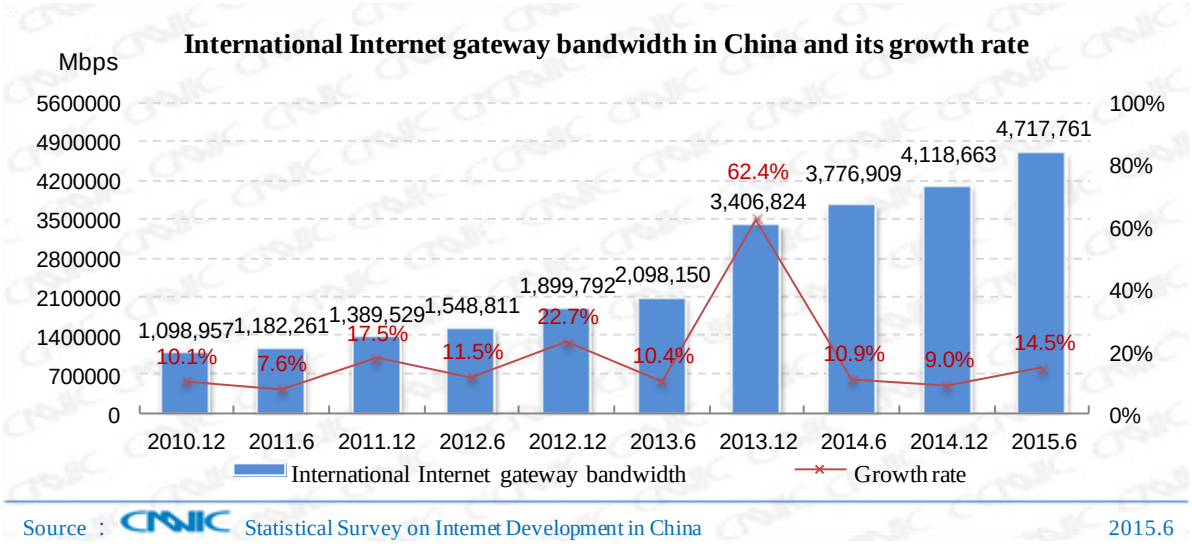


Figure 16 International Internet gateway bandwidth in China and its growth rate

Table 4 International Internet Gateway Bandwidths of Backbone Networks

	International Internet gateway bandwidths (Mbps)
China Telecom	3,040,846
China Unicom	1,190,060
China Mobile	389,573
China Education and Research Network	61,440
China Science and Technology Network	35,840
China International Economy and Trade Network	2
Total	4,717,761

Chapter IV Personal Internet Applications

Ⅰ. Online Duration

In the first half of 2015, the online duration of China's Internet users per capita per week was 25.6 hours on average, a decrease of 0.5 hour from the end of 2014.

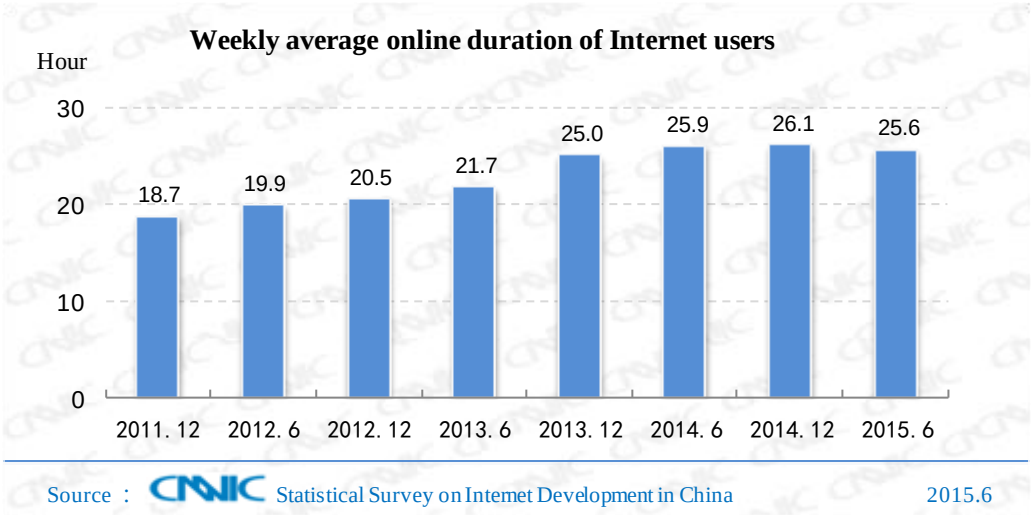


Figure 17 Weekly average online duration of Internet users

Ⅱ. Overall Situation of Internet Application

In the first half of the year, China's personal Internet applications showed an accelerated trend of differentiation:the utilization ratios of E-mail, BBS and other traditional Internet applications continued to decline; online search, instant messaging and other basic network applications were almost saturated in terms of utilization, turning into the direction of connection services; mobile commercial applications developed rapidly, becoming a new growth point of the network economy; and network payment shifted from online to offline, showing a rapid increase in utilization ratio. In addition, online stock speculation became a hot spot for netizens. Due to the user diversion effected of the stock market, the utilization ratio of Internet financing related applications stopped growing.

Information acquisition applications were integrated with frontier technologies to realize personalized services

As basic applications of the Internet, both search engines and network news already enjoy a utilization ratio of over 80%. In the next few years, it is unlikely for the two types of applications to have a big increase in utilization ratio, but their utilization depth and user experience will be significantly improved. With regard to search engines, an integration of multimedia, natural

language recognition, artificial intelligence, machine learning, touch hardware and other technologies will promote product innovation. With respect to network news, news clients supported by "algorithms" can quickly analyze readers' interest and push the information they are interested in, so as to realize accurate and personalized information push and improve user experience.

Business transaction applications saw steady development, with a significant increase in payment instruments

After years of development, network transaction applications have come into a plateau phase. Although the growth of user scale was slowing down, the absolute scale was still on the rise, especially for online payment instruments. As for the reasons, online shopping applications are unlikely to achieve a sharp increase due to a user base that is already very large; group purchase is transforming into "non-group purchase" because the former's low-price model is unsustainable; mobile online payment instruments are being accepted by more and more users with the gradual maturation of mobile payment technologies, devices and the model of "online payment plus offline service".

Financial service-related Internet applications developed along with market changes

Development of financial service-related Internet applications in the first half of 2015 closely followed the changes in the financial market. Due to a boom of the domestic stock market in the first half of 2015, the scale of users of online stock trading rose to 56.28 million, an increase of 47.4% over the end of 2014. Because of an easy monetary policy, continued decline in the yields of monetary funds, and the user diversion effected of the stock market, the utilization ratio of Internet financing related applications stopped growing.

Network entertainment applications had a stable overall user scale, with increased and decresed utilization ratios

According to statistics, the overall user scale of network entertainment applications remained basically stable in the first half of the year. In user scale, network literature saw a slight decline but other forms of network entertainment witnessed a slight increase. In utilization ratio, network literature experienced a decrease but online video and online games showed a slight improvement. On the whole, the user scale and utilization ratio of network entertainment applications as the earliest forms of Internet applications have gradually stabilized. In the first half of 2015, an exploration into new business models represented the main direction of development.

Table 5 Utilization Ratios of Internet Applications by Chinese Netizens in December 2014 and June 2015

	June 2015		December 2014		
Applications	**Number of users (10,000)**	**Utilization ratio**	**Number of users (10,000)**	**Utilization ratio**	**Half-year growth rate**
Instant messaging	60626	90.8%	58776	90.6%	3.1%
Netnews	55467	83.1%	51894	80.0%	6.9%

Search engine	53615	80.3%	52223	80.5%	2.7%
Online music	48046	72.0%	47807	73.7%	0.5%
Blog/personal space	47457	71.1%	46679	72.0%	1.7%
Online video	46121	69.1%	43298	66.7%	6.5%
Online games	38021	56.9%	36585	56.4%	3.9%
Online shopping	37391	56.0%	36142	55.7%	3.5%
Microblog	20432	30.6%	24884	38.4%	-17.9%
Network literature	28467	42.6%	29385	45.3%	-3.1%
Online payment	35886	53.7%	30431	46.9%	17.9%
E-mail	24511	36.7%	25178	38.8%	-2.6%
Online banking	30696	46.0%	28214	43.5%	8.8%
Travel booking[4]	22903	34.3%	22173	34.2%	3.3%
Group purchase	17639	26.4%	17267	26.6%	2.2%
Forum/bbs	12007	18.0%	12908	19.9%	-7.0%
Online stock or fund speculation	5628	8.4%	3819	5.9%	47.4%
Internet financing	7849	11.8%	7849	12.1%	0.0%

Table 6 Utilization Ratios of Mobile Applications by Chinese Mobile Netizens in December 2014 and June 2015

	June 2015		**December 2014**		
Applications	**Number of users (10,000)**	**Utilization ratio**	**Number of users (10,000)**	**Utilization ratio**	**Half-year growth rate**
Mobile instant messaging	54018	91.0%	50762	91.2%	6.4%
Mobile search	45434	76.5%	42914	77.1%	5.9%
Mobile Netnews	45959	77.4%	41539	74.6%	10.6%
Mobile online music	38556	65.0%	36642	65.8%	5.2%
Mobile online video	35434	59.7%	31280	56.2%	13.3%
Mobile online game	26699	45.0%	24823	44.6%	7.6%
Mobile online shopping	27041	45.6%	23609	42.4%	14.5%
Mobile network	24908	42.0%	22626	40.6%	10.1%

[4] In this report, travel booking is defined as booking air tickets, hotel rooms, train tickets or travel routes via the Internet in the recent 6 months.

	June 2015		December 2014		
literature					
Mobile online payment	27579	46.5%	21739	39.0%	26.9%
Mobile online banking	21471	36.2%	19813	35.6%	8.4%
Mobile Microblog	16227	27.3%	17083	30.7%	-5.0%
Mobile mail	14228	24.0%	14040	25.2%	1.3%
Mobile travel booking	16772	28.3%	13422	24.1%	25.0%
Mobile group purchase	12906	21.7%	11872	21.3%	8.7%
Mobile forum /bbs	7662	12.9%	7571	13.6%	1.2%
Mobile online stock or fund speculation	3695	6.2%	1947	3.5%	89.8%

(Ⅰ) Development of Information Acquisition Applications

1.1 Search Engine

As of June 2015, China had 536 million search engine users, representing a half-year increase of 13.92 million or 2.7%, with a utilization ratio of 80.3%; the country also had 454 million mobile search users, a half-year increment of 25.2 million or 5.9%, with a utilization ratio of 76.5%.

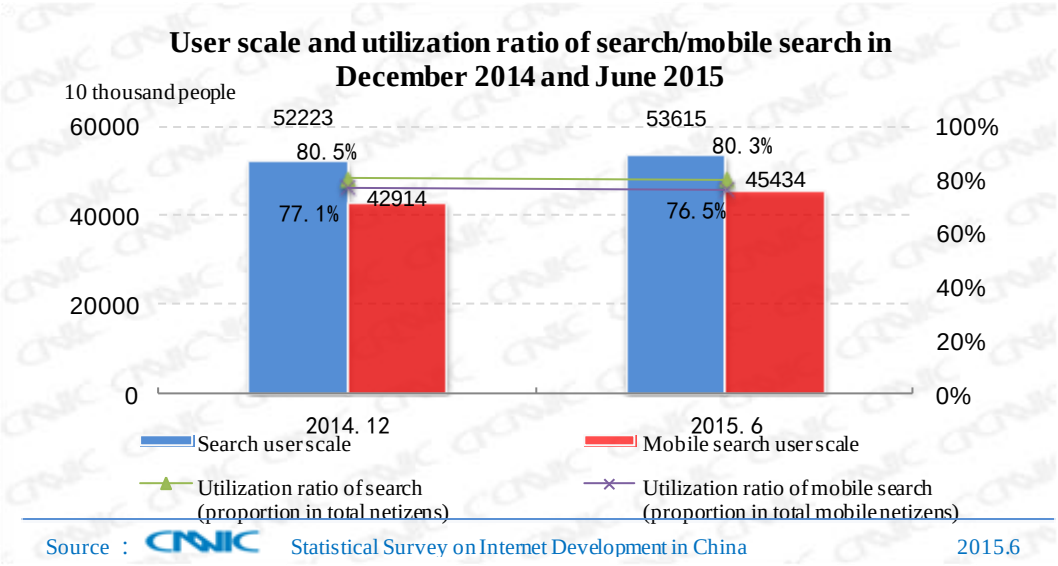


Figure 18 User scale and utilization ratio of search/mobile search in December 2014 and June 2015

In the first half of 2015 mobile search was the main driving force for the development of the whole search market. Firstly, netizens' daily life was increasingly centered round the mobile end, mobile search scenarios were greatly enriched, and the mobile search market surpassed the overall search market in terms of both user scale increment and growth rate. Secondly, for search service providers, the proportion of mobile search revenue in the total revenue kept rising and mobile search was becoming their pillar business. According to the financial statement of Baidu for example, the proportion of its mobile search service revenue was 10% in the second quarter of 2013 but 50% in the first quarter of 2015. This proportion was 22% for Sogou in the first quarter of 2015.

The integration of search technology with frontier technologies has accelerated product innovation and improved user experience. By integrating natural language recognition, artificial intellegence, machine learning and other technologies, deep question-answering search engines represented by interactive question-answering robots were developed, enabling users to acquire knowledge more accurately and rapidly. The mode of search input was increasingly diversified. In addition to voice and image input, touch-control hardware devices were introduced, which not only improved search experience but also promoted Internet universal services. For example, the studies jointly carried out by Baidu and Tsinghua on touchable dot matrix screen and voice interaction were intended to provide search services for visually impaired persons.

The mode of search engine service has changed, showing a trend of "de-product" and serving as a bridge linking users to services. As a key supporting technology and basic connection services, search engines play an important role in the formation of an Internet eco chain. With respect to goods and service transactions, search engines have launched direct service, which means that online businesses and shops may skip the search results page to directly render their services and products to the user. In regard to public services, search engines, through big data analysis and cloud computing, cooperate with government departments in such areas as education, healthcare and transportation and promote the development of smart cities, smart medical services and other projects so as to improve the efficiency and quality of public services. In the trend of "de-product", the profit model of search engines is no longer restricted to keyword ranking. Instead, search engines offer user-oriented "one-stop" life service search, provide cloud storage, cloud computing, operation management tools and other value-added services for enterprises, accurately push information according to user attributes and features, and help enterprises to carry out marketing and build a closed O2O loop.

1.2 Netnews

As of June 2015 China had 555 million of Netnews readers, a half-year increase of 35.72 million or 6.9%. Netnews utilization ratio by Internet users was 83.1%, up by 3.1 percentage points over the end of 2014. In particular, the user scale of mobile Netnews was 460 million, up by 44.2 million or 10.6% over the end of 2014, and the utilization ratio was 77.4%, up 2.8 percentage points in half a year.

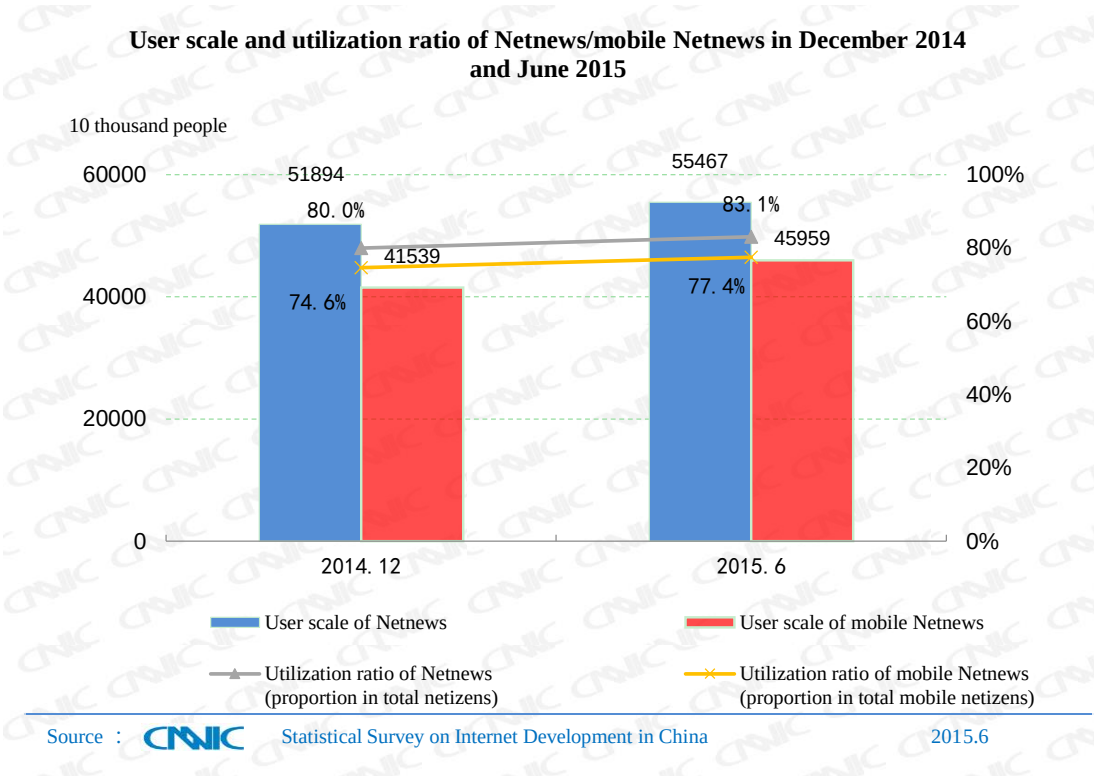


Figure 19 User scale and utilization ratio of Netnews/mobile Netnews in December 2014 and June 2015

As an important form of information acquisition application, Netnews is only second to instant messaging in terms of utilization ratio. The development of Netnews is mainly characterized by diversification of news portals and precise recommendation of content.

Firstly, there are numerous news communication platforms to provide diversified channels for users to acquire information. In addition to traditional portal and professional news websites, web browsers, instant messaging tools, social media and even some application distribution APPs are pushing news to their vast users. Browsers and distribution APPs are mainly used for user and traffic import. Instant messaging tools and social media, with strong social attributes, mainly forward news and load personalized comments so as to enhance the readability of news.

Secondly, news channels interpret users by means of recommendation engine technology to realize accurate recommendation of news. Each news channel first collects massive information and finds out hot information through big data analysis. Then a user model is established according to the user's social relationship chain and browse record, and highly-relevant information is pushed to the user in a smart manner. During use, the system automatically records the user's reading behavior, constantly explores his/her interest and optimizes the recommendation algorithm to eventually achieve personalized reading and improve the user's reading experience.

As for development trend, the diversification of news portals will continue for a long time to come and news recommendation will be made more accurate so as to better meet the individual needs of users. On this basis, more business models such as precision advertising, O2O service

entry, etc, will derive from Netnews, especially news clients, forecasting a better industry development prospect.

(Ⅱ) Development of Business Transaction Applications

2.1 Online Shopping

As of June 2015 China had 374 million online shoppers, an increment of 12.49 million or 3.5% over the end of 2014. The half-year growth rate was 9.8% and 9.0% in the first half and second half of 2014 respectively, indicating that the growth rate of China's online shoppers was on continuous decline. Different from the overall market situation, China's mobile online shoppers had rapidly increased to 270 million by June 2015, an increase of 14.5% in six months, or 4.1 times the growth rate of the overall online shopping market. The utilization ratio of mobile online shopping grew from 42.4% to 45.6% in half a year.

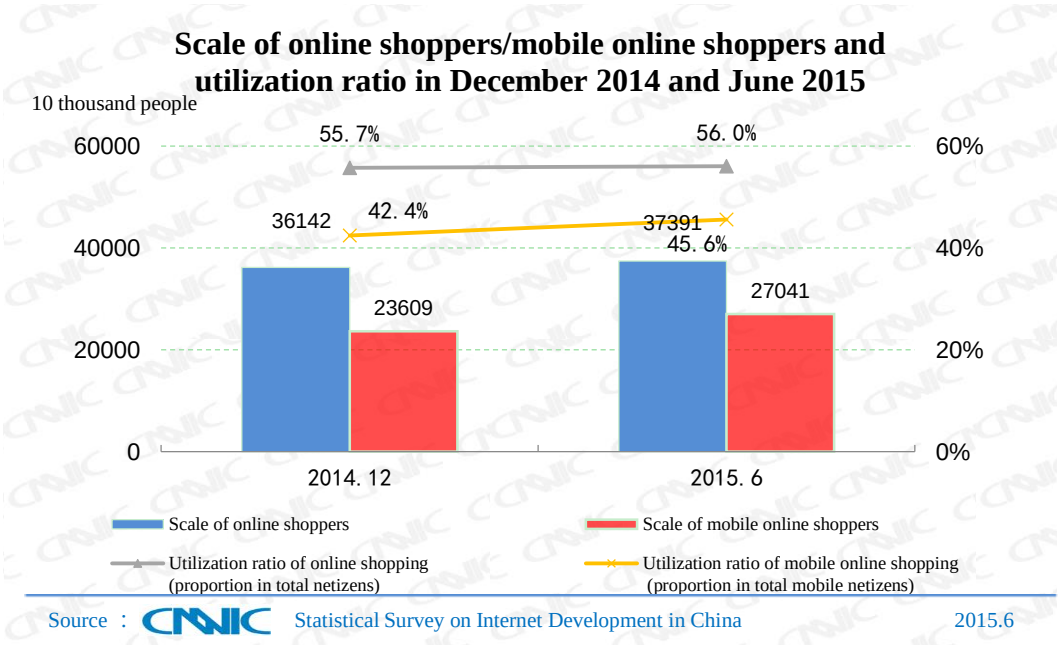


Figure 20 Scale of online shoppers/mobile online shoppers and utilization ratio in December 2014 and June 2015

Booming of the online shopping market in recent years is closely related to macro policies and economic, social and technical environments. Specifically:

"Internet +" related policies have promoted the rapid development of online shopping as well as other industries' transformation and upgrading. The concept of "Internet +" was first used in the Government Work Report in March 2015, aiming at driving the development of traditional industries through wider application of the Internet technology. As an easy entry into "Internet +", online shopping can give impetus to the transformation and upgrading of traditional retail, logistics & express, transportation, manufacturing and other industries. Not long after, the Ministry of Commerce issued an "Internet + Circulation" Action Plan, clearly setting forth the tasks of deeply integrating online shopping with other industries to transform and upgrade these industries.

Overall stability of the consumption market and steady improvement of per capita disposable income of Chinese residents provide the necessary foundation for the prosperity of the online shopping market. At the same time, the Chinese economy is shifting from being driven mainly by foreign demand to being driven mainly by domestic demand, where online shopping plays an increasingly important role in realizing consumer-driven economic growth. In this context, mobile online shopping, cross-border online shopping and rural online shopping show a growing development potential and will become a new growth point of the economy.

The overall integrity level of society has been improved, owing to gradual improvement of the network transaction environment and implementation of the real-name system. In response to the call of the government, instant messaging and online shopping websites launched industry self-discipline conventions and real-name authentication systems in recent years to improve the level of integrity of the industry and form a market integrity system that is guided by the government and participated in by multiple parties.

The development of technology promotes innovation and improves users' consumption experience. New Internet technologies have produced a greater impact on the network retail industry; diversified mobile payment methods are reshaping users' consumption habits; the development of smart phones and mobile applications are replacing the traditional wallet. The development of 3D printing, UAV delivery, virtual fitting and other technologies will not only improve user experience but also drive innovations in manufacturing, transportation, logistics, platform demonstration and other areas.

2.2 Group Purchase

As of June 2015 China had 176 million group-purchase users, a half-year net increase of 3.72 million or 2.2%, and the utilization ratio of group-purchase websites was 26.4%. In the overall group-purchase market, mobile group purchase saw the fastest growth, with a user scale of 129 million, a half-year growth rate of 8.7% and a utilization ratio of 21.7%.

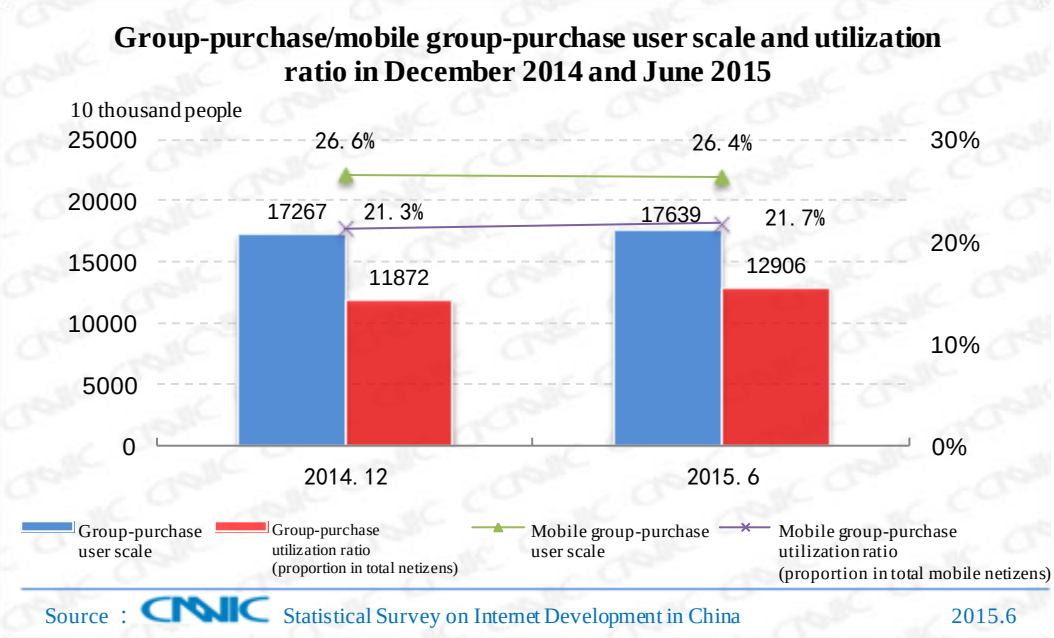


Figure 21 Group-purchase/mobile group-purchase user scale and utilization ratio in December 2014 and June 2015

In the past two years group-purchase websites were transforming into "non-group purchase" websites due to unsustainable development of the low-price model. Specifically:

The operation of group-purchase enterprises was turning from the previous price-driven model into a service-driven model. Although the initial low-price policy of group purchase was very effective in stimulating fuzzy demand and attracting new customers, such a policy could neither enhance the merchant's brand awareness or customer loyalty nor achieve expected profits, and therefore was unsustainable. In view of this, group-purchase websites began to improve the experience, satisfaction and loyalty of users by offering more convenient services. For example, they launched some new services such as free reservation, instant service of "on-the-spot ordering – group coupon – consumption", online seat selection and self-help ticket pickup on automatic terminals for group-purchased movies tickets, etc.

Construction of large and complete group-purchase platforms was being replaced by development of vertical business. When the market pattern of the group-purchase industry was basically stabilized and it was no longer easy for enterprises to rapidly increase their market share, group-purchase platforms stopped pursuing mere category expansion but began to concentrate their resources and energy on their advantageous business and potential business. The purpose was to drive the development of the whole platform by hatching and expanding vertical business on the group-purchase platform. Meituan.com, for example, vigorously develops movie ticket service and takeaway food service, two frequently-consumed services, and launched an independent Maoyan movie mobile client. At the same time, Meituan is also expanding group-purchase services for tourism products.

Group-purchase websites are changing into local life service platforms to make profits by providing marketing services. Group-purchase websites used to attract customers by low prices and therefore, the gross profit was very marginal, not to mention net profit. After turning into local life service platforms, the profit model of group-purchase websites has become platform

economy, which means group-purchase websites have the ownership of platform resources, the right to use these resources to be copied and leased to online merchants batch by batch, and the merchants use the platforms' resources and services to do their own group-purchase business. For instance, after 55tuan.com was renamed 55.com, it began to provide the merchants on its platform with various marketing services.

2.3 Online Payment

As of June 2015 China had 359 million online payment users, an increment of 54.55 million or 17.9% over the end of 2014. The utilization ratio of online payment increased from 46.9% to 53.7% in six months. In the same period a rapid growth was seen in mobile online payment. The user scale of mobile online payment rose to 276 million at a half-year growth rate of 26.9%, 1.5 times higher than the growth rate of the overall online payment market, and the utilization ratio of mobile online payment increased from 39% to 46.5% in six months.

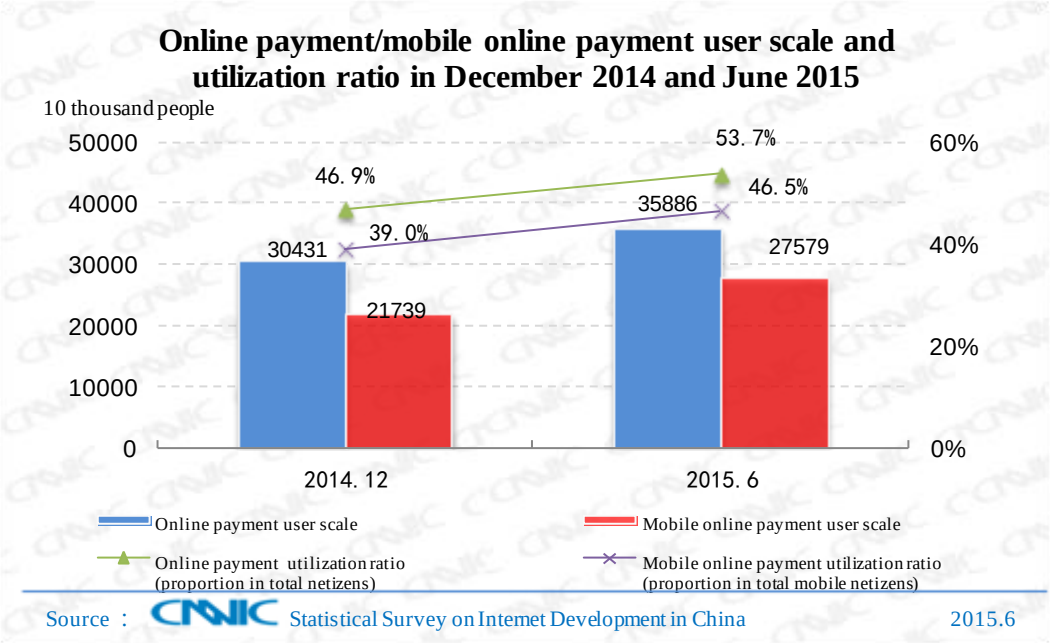


Figure 22 Online payment/mobile online payment user scale and utilization ratio in December 2014 and June 2015

Throughout the development process of online payment, its application range and mode keep expanding and deepening. Specifically:

Technology progress enriches the application scenarios and modes of online payment. Online payment provides the basic service needed for capital circulation. With the development of mobile Internet technology and the improvement of application level, various application scenarios have sprung up such as payment by code scanning or card swiping, repayment by credit card, payment for the use of public utilities, distribution of "red packets", etc. Thanks to biometric authentication technology, new applications such as payment based on fingerprint identification or human face identification have come into being in the field of online payment. Enrichment of application scenarios and modes is in line with the new ideas on the development of online payment platforms and has promoted the innovation of online payment business model and way

of cashing.

Concentrated capital flows have made it possible for network payment companies to expand their financial services. With the increase in the magnitude of capital amount in various network payment instruments and the constant explorations made by network payment companies, the traditional profit model of "transaction fees + interest on deposit" has been innovated, new products of consumer finance have been created, and new services have been launched such as supply chain finance, Internet banking, P2P loan, network credit card, etc. These services, on the one hand, cut into consumers' everyday life and facilitate their fund inflow, outflow and wealth appreciation and on the other hand, help micro enterprises secure loans and solve trade-related problems by means of crowd funding through the Internet. On this basis, network payment companies have created a closed loop of value-added circulation of fund on their platforms.

Data resources and data mining technologies help online payment companies to establish a credit-recording mechanism. For individuals, their personal credit record is closely related to their online payment behavior. With the improvement of the business structure of network payment platforms, the mass storage of user data, and the increasing maturation of data mining technology, network payment companies already have the basic qualification for collecting, recording and providing personal credit information. After being authorized by the government, eight companies including zmxy.antgroup.com and Tencent Credit Rating Co., Ltd have started personal credit information services. In the future, the personal credit rating system of Alibaba, based on its payment chain, and that of Tencent, based on its user relationship, will combine with the basic data of the People's Band of China and other credit rating agencies to form an extensive, comprehensive and sound personal credit evaluation system in the industry.

2.4 Travel Booking[5]

Up to June 2015, the scale of netizens with the experience of booking air tickets, hotel rooms, train tickets or holiday travels on the Internet reached 229 million, an increase of 7.3 million or 3.3% over the end of 2014. The Internet users who had ever booked train tickets, air tickets, hotels and holiday travels online accounted for 26.8%, 13.3%, 13.8% and 6.2% respectively. In particular, users of online hotel booking increased remarkably with a half-year increment of 7.72 million or 9.1%, the biggest contributor to the growth of the overall online travel booking market. In the same period, the scale of users who had ever booked air tickets, hotel rooms, train tickets or holiday travels on the mobile Internet using cell phones reached 168 million, a half-year increment of 33.5 million or 25.0%, showing a growth rate 7.6 times that of the overall online travel booking market. Chinese netizens' utilization ratio of mobile online travel booking increased from 24.1% to 28.3%.

[5]In this report, travel booking is defined as booking air tickets, hotel rooms, train tickets or travel routes via the Internet in the recent 6 months

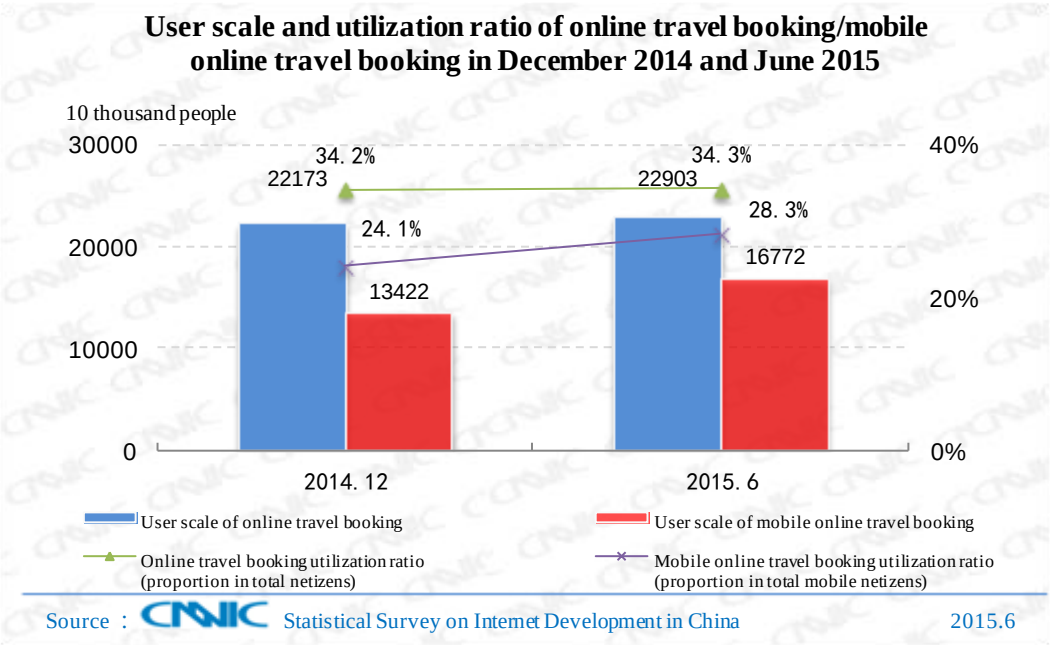


Figure 23 User scale and utilization ratio of online travel booking/mobile online travel booking in December 2014 and June 2015

In the past two years, the online travel booking industry showed a trend of whole industry chain expansion. Specifically:

Online travel booking companies have accelerated strategic industrial chain expansion through frequent investment in mergers and acquisitions. Price wars once played an important role in the competition between online travel booking enterprises, but too much capital consumption has led such competition to a deadlock. Therefore, the online travel booking industry has invested in mergers and acquisitions continuously to expand the industry chain, integrate resources, restructure assets, strengthen business and enhance brand value. Ctrip.com, for example, has invested since 2014 in toursforfun.com, tuniu.com, LY.com, Mind Education, Yilong.com, yongche.com and some other enterprises. Through these mergers and acquisitions, Ctrip.com has fortified its position in the North American market of tourism, scenic spot tickets, study tours, hotels and car rental.

By business expansion, online travel booking companies have developed a service chain that runs throughout the entire travel process, in which car reservation and bus ticket services are the most obvious. After years of development, air tickets, hotels, holiday travels and scenic spot tickets have become mature products of online travel booking companies. With the rise of car-reservation software, online travel booking enterprises actively cooperate with car rental companies, car-reservation software companies and other emerging upstream service providers to expand frequently-consumed services related with the use of vehicles. In addition, online travel booking enterprises also develop bus ticket services to meet consumers' diversified needs for short- and medium-distance travels, and build a sound one-stop online travel booking service system to form a complete industry chain.

Online travel booking enterprises enrich the subjects of the supply chain of their platforms through business model integration. To maintain differentiated competitive advantages, online travel booking companies once adhered to independent business models, including agency, open

platform, self-operation, etc. To meet users' increasingly diversified and personalized needs, diversify the sources and channels of products, and improve users' consumption experience and brand loyalty, the models of agency, open platform and self-operation of online travel booking companies have begun to penetrate into and integrate with each other. For example, Ctrip created the idea of open platform, and Qunar introduced the idea of agency for its hotel service and the model of agency for its budget hotel service. After integration, online travel booking enterprises complement each other, which has not only enriched the existing product supply modes, sources and channels but also diversified their profit models and increased operation income.

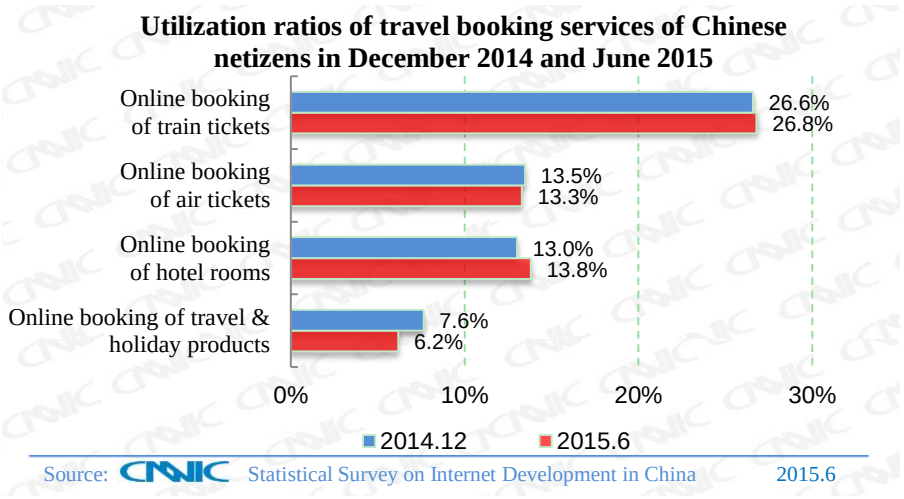


Figure 24 Utilization ratios of travel booking services of Chinese netizens in December 2014 and June 2015

2.5 Internet Financing

After a high-speed growth period, the utilization ratio of Internet financing entered a plateau in the first half of 2015. As of June 2015 Internet financing products had been purchased by 78.49 million netizens, no difference from the situation at the end of 2014; and the utilization ratio was 11.8%, a slight fall of 0.3 percentage point in six months.

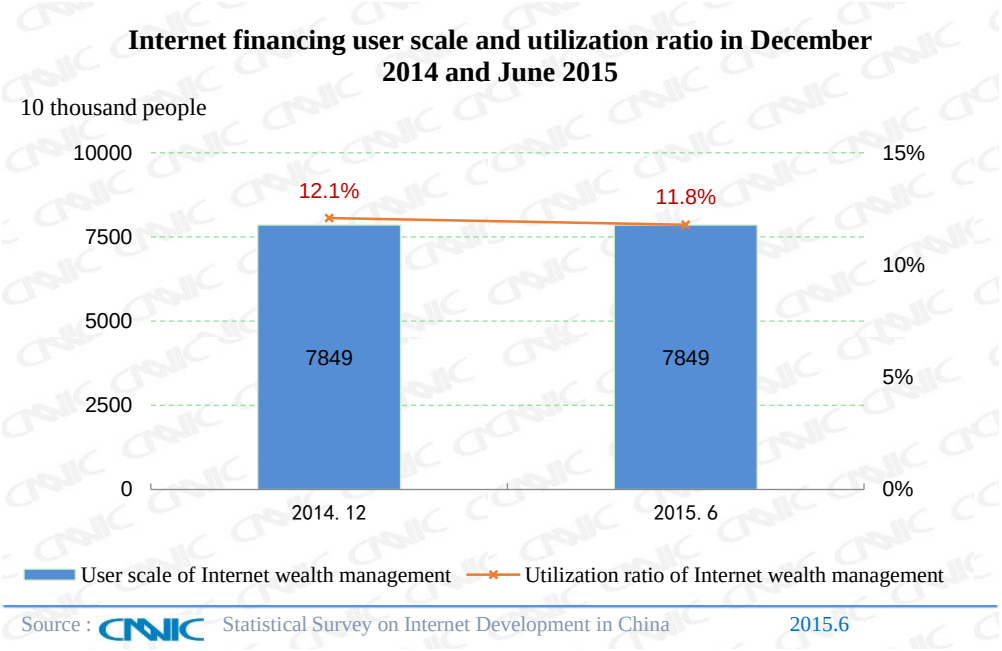


Figure 25 Internet financing user scale and utilization ratio in December 2014 and June 2015

The utilization ratio of Internet financing entered into a plateau in 2015 mainly due to the following two reasons. First, the overall financial market experienced violent changes and a large number of users of Internet financing were diverted to the stock market due to soaring stock prices. In the first half of the year, the user scale of online stock speculation or fund speculation increased by 18.09 million, of whom users aged 30 or below accounted for 41.8%. The stock market has a stronger attraction for young low-net-wealth population groups and they are exactly the core user groups of Internet financing. Second, affected by an easy monetary policy, the yields of monetary funds continued to decline. In June, the rates of earnings of mainstream monetary funds were all below 4% and therefore, various “Baobao” products became much less attractive for investors.

According to trend analysis, Internet financing products will be diversified. In the first half of 2015, active cooperation was seen between Internet financial companies and their ecological partners in many areas of finance. Previously, Internet financing products were dominated by monetary funds. Today, a new pattern is taking form where bond funds, index funds and P2P loans are developing rapidly hand in hand. Although monetary funds have entered the era of low yields, their inherent advantages are still there, such as high liquidity and relatively high interest rates in comparison with interest rate of savings deposit. Moreover, since client products can be naturally connected to a lot of daily consumption scenarios, monetary funds still have a high investment value. More and more investors who have received enlightenment in Internet finnacing are looking for higher-yield financial products. In this context, bond funds, index funds and other high-yield financial products offer netizens more options and can be expected to trigger a second round of growth of the Internet financing market.

(Ⅲ) Development of Communication Applications

3.1 Instant Messaging

Up to June 2015 the user scale of instant messaging was 606 million, accounting for 90.8% of the total netizen population and representing a half-year increment of 18.50 million. In particular, users of mobile instant messaging reached 540 million, constituting 91% of mobile netizens and recording a half-year increase of 32.56 million.

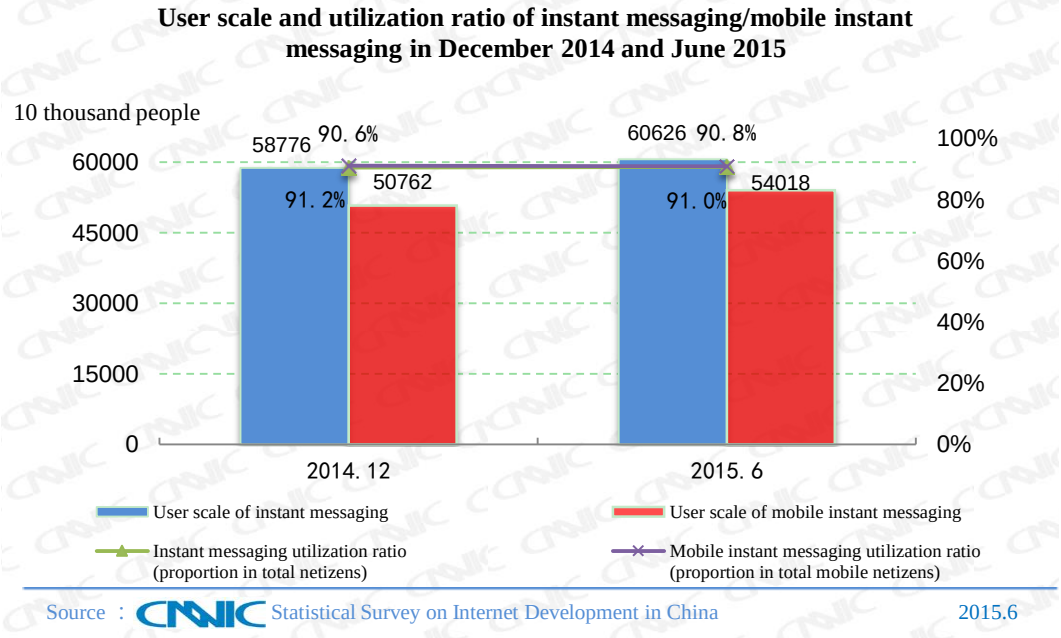


Figure 26 User scale and utilization ratio of instant messaging/mobile instant messaging in December 2014 and June 2015

In the past 6 months, Tencent's instant messaging products remained to be dominant in this field. Due to slow growth of the utilization ratio of instant messaging, how to cash it and connect it to other services has become the focus of the next step of development. Other instant messaging tools will focus on finding users' pain points of segment markets to provide more targeted professional services.

The commercialization attempts of mainstream instant messaging tools represented by Wechat and QQ are mainly manifested in two aspects:marketing mode and service mode. In terms of marketing mode, the advertisement push service in the circle of friends is the first attempt of commercialization. The industry solution and the function of "shake·surroundings" launched not long after aim to transfer traditional industries such as supermarkets and hotels from an offline business mode to an online one, greatly enhance the informatization level of traditional enterprises by virtue of its advantages in the mobile and social fields, push price discount information to potential customers in real time, analyze user groupsto realize precision marketing. With respect to service mode, mainstream instant messaging tools make continuous attempts to connect users' demands in all aspects of life, provide users with various services concerning traveling, shopping, financing, credit and entertainment. Its service platform has been connected to jd.com, tenpay.com, dianping.com, pingan.adsage.com, xiaojukeji.com, and some other applications.

Other instant messaging tools than Wechat and mobile QQ enhance their market shares mainly by identifying differentiated user demands and providing vertical user groups with more professional services. Differentiation is mainly reflected in content, user relationship and scenario. For example, with respect to user relationship, Momo is dedicated to the social and interest circles of strangers; with regard to content, Wumii is designed for anonymous socialization; as for scenario, Wangwang and Dingtalk are used for different life scenes. All these applications are favored by quite a large user group in their respective market segments because they satisfy the vertical needs of users. Obviously, the core direction of future development of instant messaging in China is to clearly understand the competitive advantage of the company's own products and market positioning, and better serve target user groups on the basis of differentiation and innovation.

3.2 Microblog

In June 2015 China's microblog user scale and utilization ratio were respectively 204 million and 30.6%, where mobile microblog user scale and utilization ratio were respectively 162 million and 27.3%. Mobile microblog users accounted for 79.4% of total microblog users, rising 10.7% over the end of 2014. This is not only because the overall Internet is moving toward the mobile end, but also because mobile-end microblog provides new experience for users. In particular, the layout in vertical fields has widened the application scenarios of mobile terminals and enhanced user stickiness.

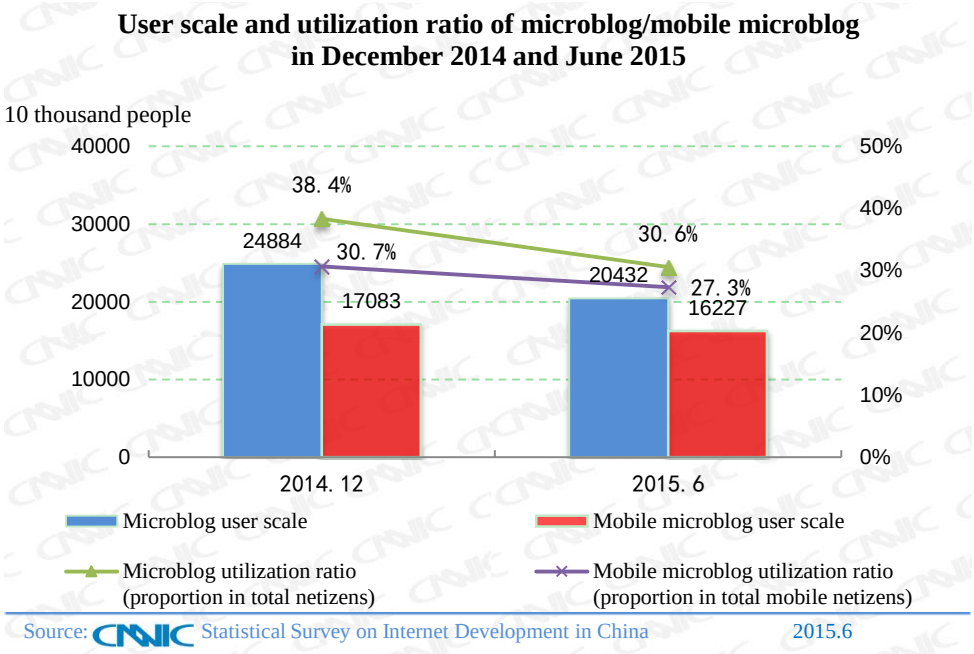


Figure 27 User scale and utilization ratio of microblog/mobile microblog in December 2014 and June 2015

Since 2013 Sohu, NetEase, Tencent and other companies have reduced investment in microblog, ushering the overall microblog market into a reshuffle period. In the first half of 2015 the pattern of brand competition in the microblog market became clear, with which more and

more users turn to Sina Weibo. Of all microblog users, those using Sina Weibo accounted for 69.4% and the utilization ratio was above 65% in cities ranging from Tier 1 to Tier 5. So far, the position of Sina as the biggest microblog operator in China has been established and consolidated.

From the perspective of the scope of social networking products as a whole, social media represented by microblog has formed a unique type of space that is totally different from all social networks. Its social media attributes are being gradually recognized by the customer market and user market. In the social media field, Weibo is growing into a social media platform that has the strongest marketing and communication effects.

(Ⅳ) Development of Network Entertainment Applications

4.1 Online Games

As of June 2015 the user scale of online games was 380 million, accounting for 56.9% of the total netizen scale and representing a half-year increment of 14.36 million. In particular, users of mobile online games reached 267 million, constituting 45% of mobile netizens and recording a half-year increase of 18.76 million.

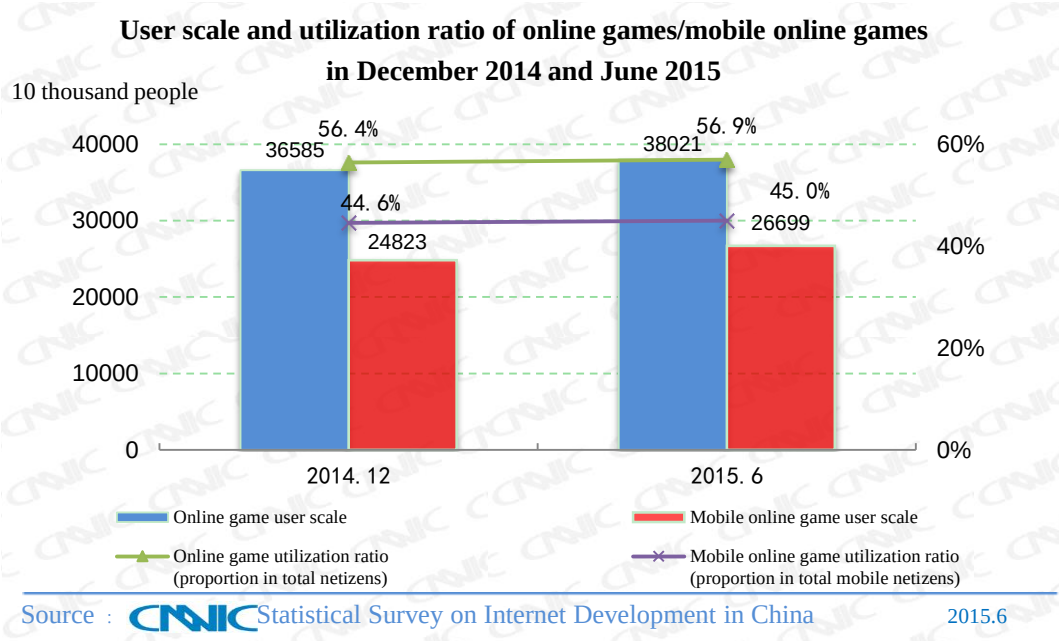


Figure 28 User scale and utilization ratio of online games/mobile online games in December 2014 and June 2015

Online games as a whole maintained rapid development in the first half of 2015 but showed a trend of diversification. Yet, different types of games had different trends of diversification. On the whole, diversified development of client games is mainly manifested by the changes in business models. The performance of mobile games in this respect is diversification and equilibrium of game types. As for console games, new technologies will open a new market for various new game consoles.

Diversification of business models mainly originates from client games. In the past six months, although mobile games produced an impact on the proportion of client games in the industry's operation revenue, the mainstay position of the latter in the entire game industry was

basically unaffected. After more than 10 years of development, the old business model of client games has been gradually outdated and is being replaced by a new business model that ranges from single products to diversified industrial ecology. With the decrease in user activeness of some old role-playing games represented by World of Warcraft, client game companies have begun to explore how to bring players better game experience and more diversified sense of participation. In this process, competitive games began to attract more attention and peripheral industries have gradually emerged around the game industry, such as live game broadcast, offline competition, electronic competition star, etc. All these will be a strong driving force for the future growth of client games.

Diversification of game types is reflected in mobile games. Although light games such as parkour and chess/card playing remain the mainstream of mobile games, heavy games such as combating and role playing are gaining more market share. Seen from the perspective of game-play frequency and average game-play duration, heavy mobile games are becoming more popular, and this trend not only has led to a significant increase in the operation revenue of mobile games in the past six months but is also conducive to improving the quality of games. In the long run, diversified and balanced types of mobile games will meet different needs of more users and will be essential for the healthy development and revenue growth of mobile games.

New technologies and diversified equipment are driving innovations of the console game industry. In the first half of 2015, existing game consoles became outdated due to policy restrictions and the impact of mobile games in both domestic and foreign markets, but a variety of new gaming devices appeared and attracted people's attention. Gaming devices based on virtual reality (VR) and augmented reality (AR) technologies have begun to appear at major electronic entertainment exhibitions and game shows. Being more real interactivity and providing better game experience, these devices are very likely to be the development direction of next-generation console games. At the same time, many domestic companies are working hard at the development of game handles, TV game boxes and some other devices. Along with the emergence of various gaming devices, the console game industry will meet another boom in the future.

4.2 Network Literature

As of June 2015 the user scale of network literature was 285 million, showing a slight decrement of 9.18 million from the end of 2014 and accounting for 42.6% of total netizens. In particular, the user scale of mobile network literature was 249 million, representing a half-year increment of 22.82 million and constituting 42% of total mobile netizens.

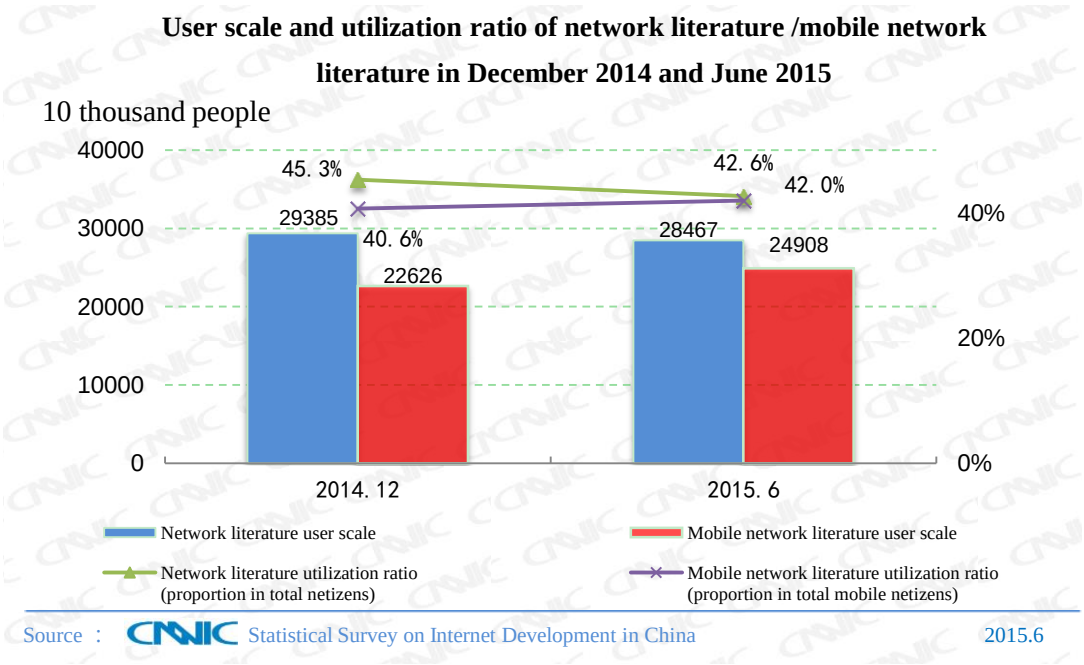


Figure 29 User scale and utilization ratio of network literature /mobile network literature in December 2014 and June 2015

As the value of high-quality intellectual property (IP) is growing rapidly in the content industry, the previous business model of merely relying on user payment is gradually transforming into a new model of "creating high-quality IP to give a transfusion of blood to other easily-cashable content industries". As the upstream end of IP production, network literature attracted great attention from major Internet companies in the first half of 2015. Baidu, Tencent and Alibaba have set up their own network literature department, hoping to gain advantage when compete in the content industry in the future.

Involvement of these Internet giants in the field of network literature aims at competition needs, but objectively provides a lot of convenience for readers and writers. Firstly, through mergers, acquisitions and restructuring, scattered literature resources are integrated into a limited number of channels, which greatly reduces the time required for readers to find new works and improves user stickiness. Furthermore, literature websites can trace and analyze users' reading habits and the content they read over a long period of time so as to more effectively recommend new works to them according to their interest and thus provide more opportunities for promising writers. Secondly, based on the content industry layout made in recent years, Internet giants have already possessed the ability to adapt network literature. This provides more possibilities and greater convenience for IP conversion and utilization, and effectively improves the utilization efficiency of high-quality IP. Finally, many video websites find it increasingly difficult to make profits because high-quality IP is more and more expensive (the price of copyright of some popular video works is already as high as millions of RMB). This not only proves the huge economic potential of network literature but also reflects the great financial pressure on copyright buyers. In this context, nurturing their own high-quality IP to support other content services will help video websites to reduce operation cost.

As the advantages of this new business model become more and more obvious, the old "user

to pay" model will eventually be replaced. Cultivating and converting high-quality popular IP will be the main development direction of future network literature and re-release of the value of network literature caused by this change will revitalize the entire network literature industry.

4.3 Online Video

As of June 2015 China's online video user scale and utilization ratio were respectively 461 million and 69.1%, up 28.23 million and 2.3 percentage points over the end of 2014. Among all online video users, mobile video users were 354 million, a half-year increase of 41.54 million or 13.3%. The ratio of utilization by Internet users reached 59.7%, up by 3.5 percentage points over the end of 2014. Mobile video users accounted for 76.8% of the total, up 4.6 percentage points over the end of 2014, indicating that the growth of mobile video users was still the main contributor to the growth of users of the entire online video industry.

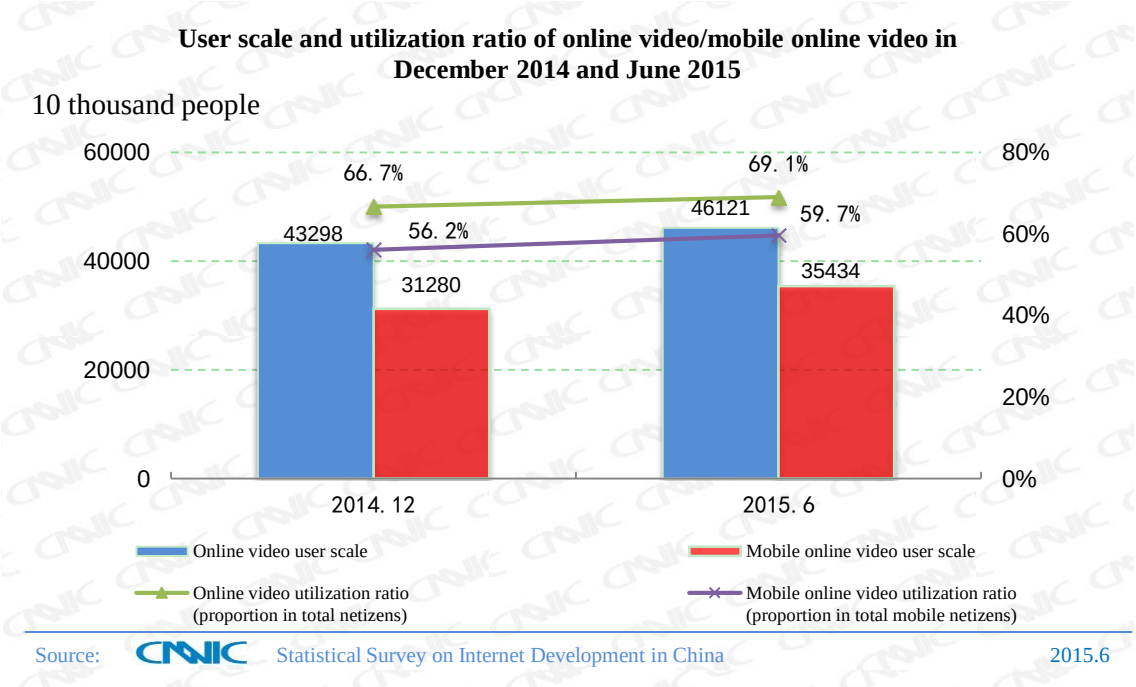


Figure 30 User scale and utilization ratio of online video/mobile online video in December 2014 and June 2015

In the process of development, the online video industry has been plagued with broadband, copyright cost and a single profit model and therefore, most companies are at a loss. As the industry matures, however, this situation is expected to change. Judging from the current development trend of the entire video industry, video websites have come to the breakeven point and are more and more likely to make profits in the near future.

First of all, the present big user base and user stickiness has laid the foundation for video websites to make profits. With the development of network bandwidth and terminal devices since 2007, there has been a rapid increase in the user scale of online video, which is now the second biggest entertainment application following network music. Besides, online video is a form of low-cost yet high-demand entertainment, and users watch it very frequently and tend to spend a long time.

Secondly, diversified business models have expanded the revenue sources of video websites. The proportion of revenue from traditional placement ads in the total revenue of video websites has been on the decline, and new profit models have been on trial, such as PGC content-specific brand placement, the "on-the-screen purchase" mode characterized by "buying while watching" in cooperation with E-commerce companies, large-scale offline interactive experience activities, different membership-specific arrangements to attract fee-paying users, etc. It is obvious that the profit model of video websites is increasingly diversified.

Thirdly, the overall market environment is favorable for video websites to make profits. On the one hand, the conditions for forward charging are already ripe for users. Mainstream video sites work together with other parties to fight against piracy linking and create a healthy industry environment that is more conducive to video copyright protection, meanwhile, user experience about mobile payment security and convenience has been improved, and the scale of fee-paying users is growing rapidly. On the other hand, the industry's content cost has dropped significantly, and mainstream video sites share their cost by joint purchase of copyright. At the same time, they have enhanced the production of PGC content so as to reduce the reliance on professional copyrighters and keep content cost within a controllable range.

Appendix 1 Tables of Basic Internet Resources

Table 1 Number of IPv4 addresses in different regions of China

Region	Number of addresses	Equivalence
Mainland China	335543808	19A+255B+254C
Taiwan	35476224	2A+29B+83C
Hong Kong SAR	12126464	185B+9C
Macau SAR	331008	5B+13C

Table 2 Allocation of IPv4 addresses among organizations in Mainland China

Organization name	Number of addresses	Total number of IPv4 addresses
China Telecom	125761280	7A+126B+247C
China United Network Communications Corporation	69866752[Note1]	4A+42B+21C
Members of CNNIC IP Address Allocation Alliance	58756352[Note2]	3A+128B+141C
China Mobile Communications Corporation	35293184	2A+26B+144C
China Education and Research Network	16649728	254B+14C
China Tietong Telecom	15796224[Note3]	241B+136C
Others	13420288	204B+199C
Total	335543808	19A+255B+254C

Data source: APNIC and CNNIC

Note 1: The addresses of China United Network Communication Limited include the addresses of former China Unicom and former China Netcom. Specifically, the IPv4 address 6316032 (96B+96C) of former China Unicom is assigned by CNNIC;

Note 2: As a national Internet registry (NIR) approved by APNIC and national competent authorities in China, CNNIC has organized ISPs, enterprises and public institutions of certain size in China to set up IP Address Allocation Alliance of China. So far, the total number of IPv4 addresses held by the members of CNNIC IP Address Allocation Alliance is 80871168, equivalent to 4A+209B+255C. The IPv4 addresses of the members of IP Address Allocation Alliance of China listed in the above table do not include those IPv4 addresses already assigned to former China Unicom and Chine Tietong Telecom.

Note 3: The IPv4 addresses of China Tietong Telecom are assigned by CNNIC;

The deadline for the above statistical data is 30 June 2015.

Table 3 Number of IPv6 addresses in different regions of China

Region	Number of addresses
Mainland China	19338 blocks /32
Taiwan	2360 blocks /32
Hong Kong SAR	217 blocks /32
Macau SAR	4 blocks /32

Table 4 IPv6 address allocation in Mainland China

Organization name	Number of IPv6 addresses（/32[Note1]）
Members of CNNIC IP Address Allocation Alliance	4644[Note2]
China Telecom	4099
China United Network Communications Corporation	4097
China Mobile Communications Corporation	4097
China Tietong Telecom	2049[Note3]
China Science and Technology Network	17[Note4]
China Education and Research Network	17
Others	318

Data source: APNIC and CNNIC

Note 1: /32 as shown in the IPv6 address allocation table is a method to present IPv6 addresses, and the corresponding number of addresses is $2^{(128-32)}=2^{96}$.

Note 2: At present, the total IPv6 addresses held by the members of CNNIC IP Address Allocation Alliance are 6710 blocks /32. The IPv6 addresses held by the members of IP Address Allocation Alliance listed in the above table do not include those IPv6 addresses already assigned to China Tietong and CSTNET.

Note 3: The IPv6 addresses of China Tietong Telecom are assigned by CNNIC;

Note 4: The IPv6 addresses of CSTNET are assigned by CNNIC;

The deadline for the above statistical data is 30 June 2015.

Table 5 Proportion of IPv4 address in each province

Province	Proportion
Beijing	25.44%
Guangdong	9.51%
Zhejiang	6.47%
Shandong	4.91%
Jiangsu	4.76%
Shanghai	4.45%
Liaoning	3.35%
Hebei	2.85%
Sichuan	2.78%
Henan	2.64%
Hubei	2.39%
Hunan	2.37%
Fujian	1.94%
Jiangxi	1.74%
Chongqing	1.69%
Anhui	1.66%
Shaanxi	1.63%
Guangxi	1.39%
Shanxi	1.28%
Jilin	1.22%
Heilongjiang	1.21%
Tianjin	1.05%
Yunnan	0.98%
Inner Mongolia	0.78%
Xinjiang	0.61%
Hainan	0.48%
Gansu	0.48%
Guizhou	0.44%
Ningxia	0.24%
Qinghai	0.18%
Tibet	0.13%
Others	8.98%
Total	100.00%

Data source: APNIC and CNNIC

Note 1: The above IP address statistics are for the provinces where the IP address owners are located.

Note 2: The deadline for the above statistical data is 30 June 2015.

Table 6 Number of domain names, .CN domain names and .中国 domain names by province

Province	Domain name		.CN domain name		.中国 domain name	
	Number	Proportion in total domain names	Number	Proportion in total .CN domain names	Number	Proportion in total .中国 domain names
Guangdong	4159798	18.6%	2480409	20.3%	41889	15.8%
Shandong	3133763	14.0%	2368270	19.3%	16420	6.2%
Beijing	2302910	10.3%	825589	6.7%	31985	12.1%
Shanghai	1162284	5.2%	434401	3.5%	15649	5.9%
Fujian	1005887	4.5%	454569	3.7%	12008	4.5%
Zhejiang	998112	4.5%	410610	3.4%	18498	7.0%
Jiangsu	933501	4.2%	362788	3.0%	19960	7.6%
Hubei	864429	3.9%	580233	4.7%	5527	2.1%
Heilongjiang	781719	3.5%	598308	4.9%	7779	2.9%
Henan	694698	3.1%	304628	2.5%	5217	2.0%
Sichuan	674321	3.0%	227623	1.9%	11492	4.3%
Hebei	413637	1.9%	175610	1.4%	6409	2.4%
Liaoning	412319	1.8%	197794	1.6%	10536	4.0%
Hunan	363723	1.6%	193813	1.6%	3798	1.4%
Anhui	361251	1.6%	170632	1.4%	3211	1.2%
Guangxi	314704	1.4%	215275	1.8%	2829	1.1%
Chongqing	260649	1.2%	108307	0.9%	6579	2.5%
Shaanxi	234568	1.1%	98520	0.8%	4523	1.7%
Tianjin	230078	1.0%	73511	0.6%	2738	1.0%
Jiangxi	217600	1.0%	125448	1.0%	3168	1.2%
Hainan	207325	0.9%	21784	0.2%	556	0.2%
Shanxi	150826	0.7%	59667	0.5%	2855	1.1%
Jilin	121863	0.5%	49634	0.4%	2919	1.1%
Yunnan	120481	0.5%	61070	0.5%	5320	2.0%
Guizhou	98772	0.4%	60517	0.5%	1617	0.6%
Inner Mongolia	71775	0.3%	29156	0.2%	1886	0.7%
Gansu	63909	0.3%	27416	0.2%	670	0.3%
Xinjiang	60615	0.3%	26322	0.2%	1096	0.4%
Ningxia	35360	0.2%	7612	0.1%	518	0.2%
Qinhai	18143	0.1%	5089	0.0%	211	0.1%
Tibet	8728	0.0%	3037	0.0%	275	0.1%
Others	1830427	8.2%	1486883	12.1%	16171	6.1%
Total	22308175	100.0%	12244525	100.0%	264309	100.0%

Note: The total number of domain names by province does not cover .EDU.CN.

Appendix 2 Organizations Supporting the Survey

We would like to express our heartfelt thanks to the following organizations which have provided strong support for the availability of online questionnaires for this survey and the collection of the basic resources data.

(Ⅰ) Portal websites for the survey (According to order that the websites posted the survey link)

163.com	moobuu.com	b2b.cn
iqiyi.com	iimedia.cn	

(Ⅱ) Organizations supporting the survey (listed below randomly)

China Telecom

China International Electronic Commerce Center

China Education and Research Network Center

China Science and Technology Network Center

China United Network Communications Limited

China Mobile Communications Corporation

Beijing East Netscape Information Technology Co., Ltd

Beijing Sinonets Network Communication Technology Co., Ltd.

Beijing Innovative Linkage Technology Ltd

XinnetHuatong Information Technology Co., Ltd

Guangdong Eranet International Limited

Xiamen Shangzhong On-line Technology Co., Ltd (its brand Bizcn)

Xiamen 35.com Technology Co., Ltd

Xiamen China-Source Network Service Co., Ltd.

NET.cn

Zhongqi Power S&T Co., Ltd

Appendix 3 Introduction to CNIDP

China Internet Data Platform (cnidp.cn) – open and shared Internet statistical data and services

◆Launched and run by CNNIC

◆Providing Internet statistical data and services for free

◆Reflecting the situation of Internet development in China objectively and timely

Website of the platform: www.cnidp.cn

Introduction to the platform

China Internet Data Platform, launched and run by CNNIC, adopts the research method of fixed sample panel to reflect multiple facets (macro and micro) of the development situation of Internet in China and provide multifaceted decision-making support for the participants of the Internet industry through the Internet using behavior data of Chinese Internet users samples collected by the survey clients continuously in real time and by analyzing those data statistically.

Function Demonstration

Statistical data

Provide weekly, monthly, quarterly and half-year statistical data including the covered users, visiting times, page views, visiting duration and other indicators for domestic mainstream websites/software; the data are updated within no more than 3 days.

User feature

Provide multidimensional structure distribution data including sex, age, education, occupation, income, region, and city level for domestic mainstream websites/software.

Superposition analysis

Count the superposition of user groups, and the structure distribution of different user groups for different websites/software.

Trend comparison

Provide detailed historical statistics data on a "daily" basis for domestic mainstream websites/software, so as to reflect the historical change trend.