Statistical Report on Internet Development in China (January 2016)

Preface

In 1997, state competent departments authorized to let China Internet Network Information Center (CNNIC) organize relevant Internet entities to jointly carry out the Internet development survey. Ever since then, CNNIC has published 36 statistical reports on Internet development in China, and this report is the 37th. CNNIC's reports witness the history of Internet in China, from its infancy to takeoff, provide prudent and objective data as key references for government departments and businesses to grasp the latest development of Internet in the country and make related decisions, and thus receive extensive attention and are widely quoted at home and abroad.

Since 1998, CNNIC has been issuing the Statistical Report on Internet Development in China every January and July by convention. In 2015, with putting forward and implementing the Internet+ action plan, the impacts of Internet on the whole society goes to a higher level. As a witness to Internet development, CNNIC correspondingly expanded and deepened its survey on the whole society's application of Internet. The main body of the 37th statistical report consists of three chapters: Fundamental Resources, Enterprise Application and Personal Application. The chapter of Fundamental Resources introduces the development of Fundamental resources for Internet in China; Enterprise Application looks at Chinese companies' application of Internet from the perspective of business' Internet+ development, to keep the whole society updated with the latest Internet+ development; Personal Application is dedicated to the size and structure of Internet users, the environment for Internet access and the development of personal application of Internet. The report aims to accurately and objectively reflect Internet's role in social development.

Data collection in this Report also received great support from the government, enterprises and all walks of life. All surveys went on smoothly and data collection was completed in time in close cooperation with other Internet organizations, survey websites and media. We hereby express our heartfelt gratitude to all of them. Meanwhile, we would also like to extend our sincere thanks to Internet users who have participated in our 37th statistical survey on Internet development.

China Internet Network Information Center (CNNIC)

January 2016

Contents

Abstract

1. Basic Information

◇ As of December 2015, China had 688 million Internet users, with a yearly increase of 39.51 million. The Internet penetration rate reached 50.3%, up 2.4 percentage points from the end of 2014.

◇ As of December 2015, the number of mobile Internet users in China reached 620 million, an increase of 63.03 million from the end of 2014. Mobile netizens accounted for 90.1% of the total netizen population, while this percentage was 85.8% in 2014.

◇ As of December 2015, Chinese rural netizens accounted for 28.4% of the national total, reaching 195 million, up by 16.94 million from the end of 2014.

◇ In December 2015, the proportion of Chinese netizens using desktops or laptops to access the Internet was 67.6% and 38.7% respectively. The utilization ratio of mobile phones as a means to access the Internet was 4.3 percentage points more than the end of 2014, reaching 90.1%, and this percentage was 31.5% for tablet computers and 17.9% for TV.

◇ As of December 2015, China had a total of 31.02 million domain names, of which 52.8% or 16.36 million were ".CN" domains, and 350, 000 were ".中国"domains.

◇ As of December 2015, China had a total of 4.23 million websites, of which 2.13 million were under ".CN".

◇ As of December 2015, 95.2% of Chinese companies used computers for their office work and 89.0% were Internet users; 86.3% of them accessed Internet via fixed broadband and 23.9% via mobile broadband; 32.6% of them were engaged in online sales and 31.5%in online purchase, and 33.8% launched online marketing and promotional activities.

II. Features of Enterprise Application

The basis for enterprises' application of "Internet +" was further consolidated, with the Internet usage rate up by 10.3 percentage points

In 2015, the computer usage rate, Internet usage rate and fixed broadband access rate of Chinese companies went up by 4.8, 10.3 and 8.9 percentage points, respectively from 2014. Chinese companies widely employed Internet tools for communication, information acquisition & release, internal management and commercial services while quite a number of them had applied systematic, integrated Internet tools to the whole business process, from R&D, purchase & sales, financial management, customer relations to human resources management, turned Internet from a single supportive instrument to a assistant for the management ,transformation and supply chain's reform of the company,. thus initiated the in-depth integrated development of Internet+.

Enterprises possessed basic awareness of cyber security, with 91.4% of them equipped with anti-virus and firewall software

Chinese companies possessed basic awareness of cyber security: 91.4% of them had installed anti-virus and firewall software, of which more than a quarter used paid security software; 8.9% had deployed the hardware protection system for cyber security; 17.1% deployed hardware and software integrated protection system. As business operations become more and more cyberized, companies are attaching increasing importance to cyber security, meanwhile growing demand for protecting cyber activities. These actions will accelerate the improvement of network safety management system and of cyber security technology in China, as well as the R&D and service capacity of China's cyber security industry, and stimulate the market of corporate services for cyber security.

Internet was being incorporated into the corporate strategy and ups to 13.0% of the companies demand executive leads the internet planning work.

Specialists are indispensable for a company to develop Internet+. About 34.0% of companies had set up full-time Internet related posts at the grassroots level; 24.4% full-time Internet related teams, responsible for the operation, maintenance, development, e-commerce or e-marketing, etc. Internet had become an indispensable part of a company's daily operation. Meanwhile, 13.0% of

Chinese companies demand executive leads the internet planning work and Internet+ was becoming an integral part of corporate strategic plan.

Mobile Internet marketing grew rapidly, with the WeChat utilization rate for marketing as high as 75.3%

Among companies with the experience in e-marketing, 35.5% did so via mobile Internet, of whom 21.9% paid for it. As the users' behavior is shifting to the mobile end completed, mobile marketing will become an important channel for business promotion. Among companies engaged in mobile marketing, 75.3% promoted their business on WeChat which was the most popular mobile marketing channel for companies. In addition, 52.7% of mobile marketing companies had built their own mobile website. It's one of the less costly but more convenient way of mobile marketing to optimize and adjust their PC-based website to the mobile end.

Internet facilitated the supply chain reform, with over 30% of companies engaged in online sales/purchase

As of December 2015, 32.6% of Chinese companies had launched online sales, and 31.5% had made online purchases. Driven by the boosting e-retail market in China, the number of companies engaged in online sales and the volume of their online sales are soaring. In addition, 40.7% of companies with access to the Internet had deployed the IT system, improved the standardized level and efficiency of internal management via the implementation of OA system, installed ERP and CRM systems to optimize the allocation of production & sale resources and provide efficient customer services. But the effect of coordination and linkage is still to be improved and efforts should be shifted from the optimization of individual links to the elevation of the whole business process.

III. Features of Personal Application

More than half of the population had access to Internet and the netizen population growth rate rised.

By December 2015, China had 688 million Internet users, with the increase of 39.51 million new netizens throughout the year, up by 6.1%, a growth of 1.1 percentage points from the end of

2014. The Internet penetration rate was 50.3% in China, 3.9 percentage points higher than the world average, and 10.1 percentage points higher than the Asian average[1].

Netizens' personal devices more concentrated on mobile phone, with 90.1% of netizens surfing the Internet using mobile phones

As of December 2015, China has 620 million mobile netizens who accounted for 90.1% of the netizen population, up from 85.8% at the end of 2014. More and more individuals used the mobile phone to access the Internet, resulting in the declining usage of desktops, laptops and tablets. Mobile Internet has given rise to a brand new form of social life and is changing its users' daily life in a subtle way. Most of the new entrants to the Internet world, 71.5% of them, used the mobile phone to surf the Internet. The mobile phone has become an important device driving up the netizen population.

Wi-Fi coverage was remarkably expanded, with the Wi-Fi usage rate reaching 91.8%

The network infrastructure has being improved, and the mobile network speed had significantly increased, leading to the rising 3G/4G network usage rate. As of December 2015, 88.8% of Chinese mobile netizens accessed the Internet via the 3G/4G network; the construction of smart cities helped promote the coverage of Wi-Fi in public places as mobile phones, tablets and smart TVs did to home WLAN. Meanwhile, 91.8% of netizens used Wi-Fi to access the Internet.

Mobile payment scenarios were diversified, pushing up the growth of e-payment applications

As of December 2015, China had 416 million online payers, with the increase of 36.8%. Among them, 358 million paid via mobile Internet, up by 64.5%. E-payment companies vigorously expanded Internet and mobile Internet channels, subsidized both businesses and consumers to encourage the use of mobile payment services and diversify mobile payment scenarios.

Online education, online medical services, online cab services and online car rental services reached commercial scale and Internet strongly improved public services

In 2015, China had 110 million users of online education, accounting for 16.0% of the total netizens; 152 million users of online medical services, 22.1%; 96.64 million who booked a cab and 21.65 million who hired a private car via the Internet. Internet, which is universally beneficiary,

[1]Internet penetration rate for the world and for Asia is quoted fromhttp://www.internetworldstats.com/stats.htm.

convenient and sharing, is penetrating to the public service sector, accelerating social application, innovating on the mode of social governance, improving public services and people's livelihood and promoting social harmony.

Fundamental Resources

Chapter I Basic Internet Resources

Ⅰ. An Overview of Fundamental Internet Resources

China had 337 million IPv4 addresses and 20,594 blocks/32 of IPv6 addresses by December 2015.

There were totally 31.02 million domain names in China. Specifically, ".CN" domain names annually increased by 47.6% to 16.36 million and accounted for 52.8% of the total domain names in China.

There were altogether 4.23 million websites, an annual increase of 26.3%, among which 2.13 million were ".CN" websites.

International Internet bandwidth reached 5,392,116 Mbps, with an annual growth rate of 30.9%.

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

	Dec-14	Dec-15	Annual increment	Annual growth rate
IPv4	331,988,224	336,519,680	4,531,456	1.4%
IPv6 (blocks/32)	18,797	20,594	1,797	9.6%
Domain name	20,600,526	31,020,514	10,419,988	50.6%
Including ".CN" domain names	11,089,231	16,363,594	5,274,363	47.6%
Website	3,348,926	4,229,293	880,367	26.3%
Including ".CN" websites	1,582,870	2,130,791	547,921	34.6%
International Internet bandwidth (Mbps)	4,118,663	5,392,116	1,273,453	30.9%

Ⅱ. IP Address

By December 2015, the number of IPv6 addresses in China had reached 20,594 blocks/32, with a year-on-year increase of 9.6%.

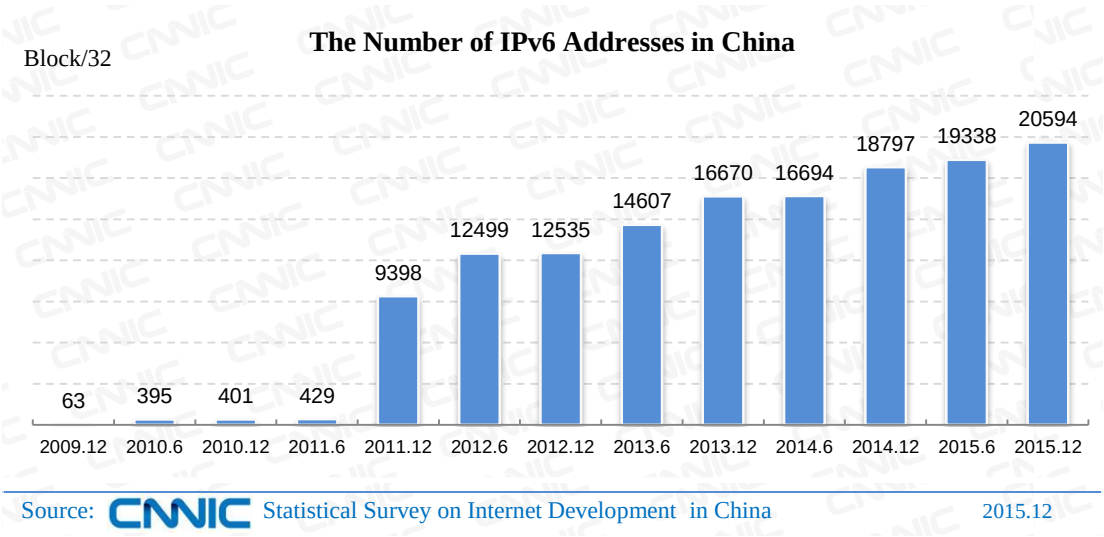


Figure 1 The Number of IPv6 Addresses in China

All IPv4 addresses had been assigned by February 2011.Since then the total number of IPv4 addresses in China had been basically stable, being 336.52 million at the end of 2015.

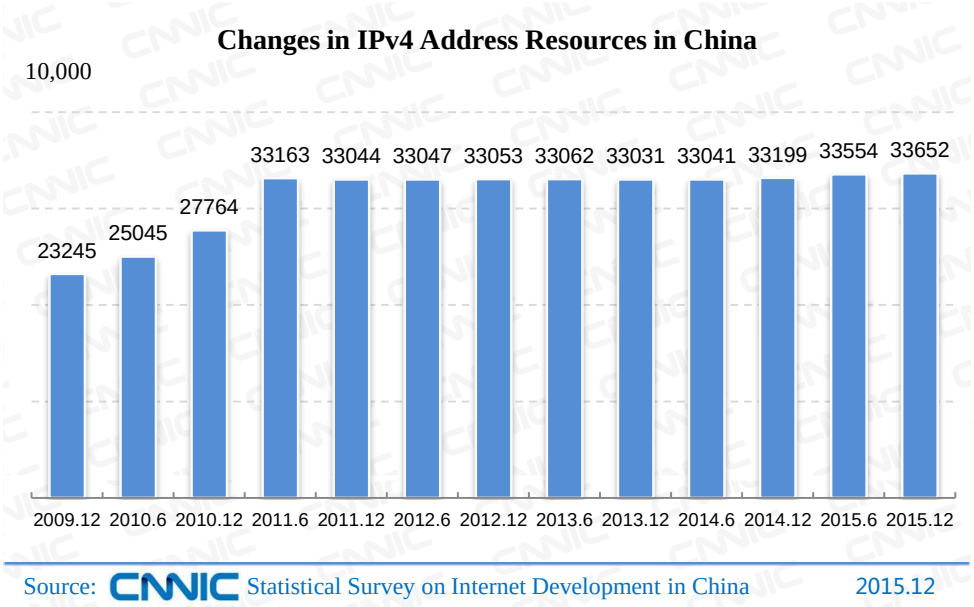


Figure 2 Changes in IPv4 Address Resources in China

III. Domain Name

By the end of 2015, the total number of domain names in China had increased to 31.02 million, up 50.6% annually.

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

	Number	Proportion in total domain names
CN	16,363,594	52.8%
COM	10,997,941	35.5%
NET	1,415,001	4.6%
ORG	397,970	1.3%
中国	352,785	1.1%
BIZ	70,770	0.2%
INFO	26,107	0.1%
Others	1,396,346	4.5%
Total	31,020,514	100.0%

By December 2015, China had 16.36 million ".CN" domain names, up by 47.6% per year, accounting for 52.8% of total domain names in China. Its quantity surpassed .DE domain names of Germany, and made .CN the biggest Country Code Top-Level Domain (ccTLD) in the world. The number of ".COM" domain names reached 11 million, accounting for 35.5%, and that of .中国 reached 353,000.

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

	Number	Proportion in total .CN domain names
.cn	11,729,750	71.7%
com.cn	2,405,969	14.7%
adm.cn	1,181,514	7.2%
net.cn	746,855	4.6%
ac.cn	124,821	0.8%
org.cn	110,779	0.7%
gov.cn	56,938	0.3%
edu.cn	6,894	0.0%
mil.cn	74	0.0%
Total	16,363,594	100.0%

[2]Generic top-level domains (gTLD) are provided by domestic domain name registries. Previous data is provided by WebHosting.Info, a domain name statistical agency.

Ⅳ. Website

As of December 2015, China had 4.23 million websites[3], representing a yearly increase of 26.3%.

Figure 3 The Number of Websites in China

Note: Websites with the domain name of ".EDU.CN" are excluded.

Ⅴ. Web Page

As of December 2015, China had 212.3 billion web pages[4] with an11.8%yearly increase.

[3]It refers to the websites whose domain name registrants are within the territory of the P.R.C.
[4]Data source: Baidu Online Network Technology (Beijing) Co., Ltd.

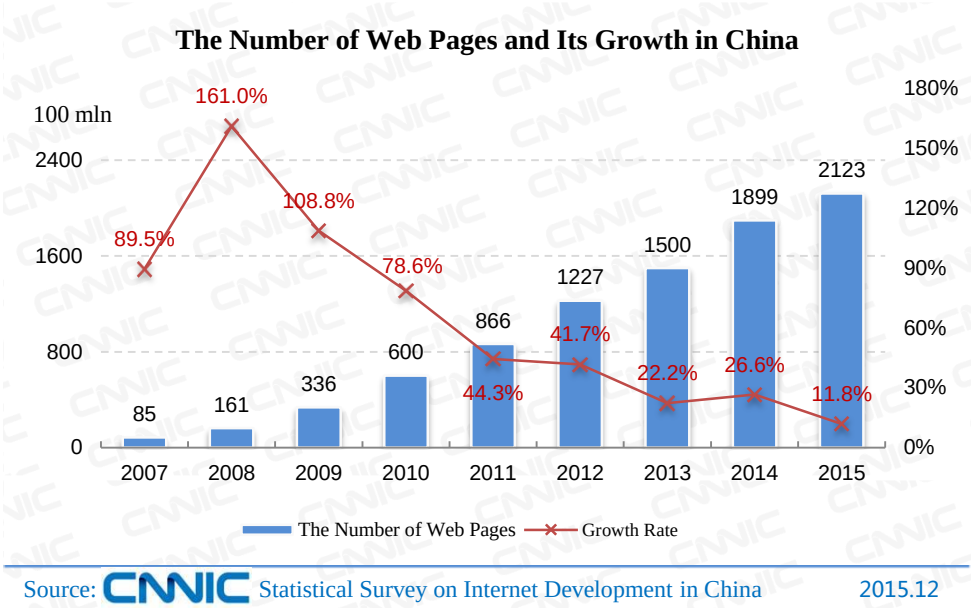


Figure 4 The Number of Web Pages in China

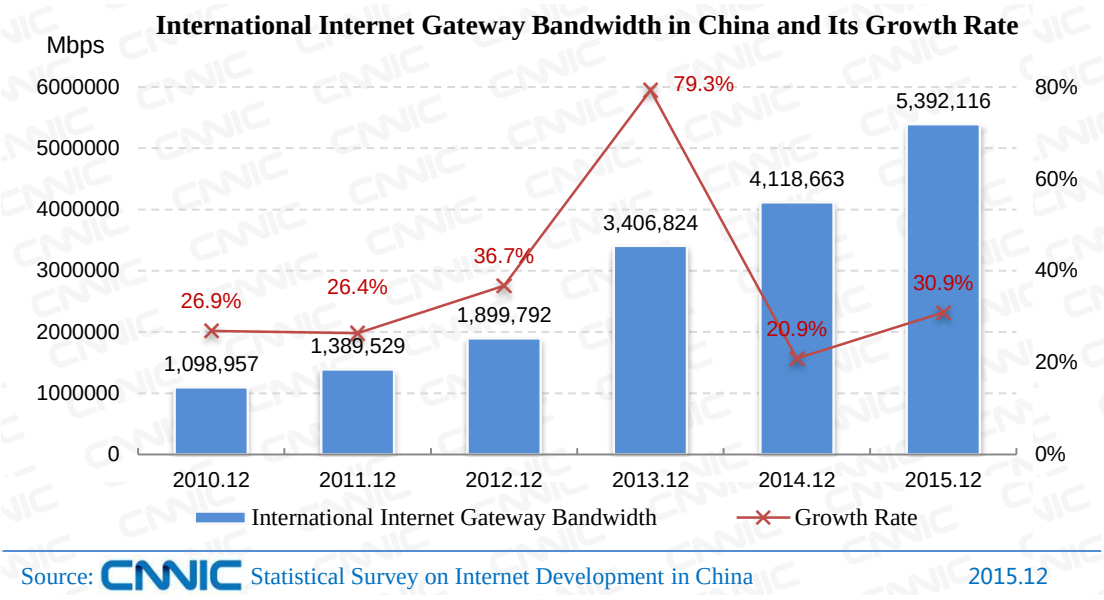
There were 131.4 billion static web pages and 80.8 billion dynamic web pages, accounting for 61.9% and 38.1% of total web pages respectively.

Table 4 Number of Web Pages in China

	Unit	2014	2015	Growth rate
Total web pages	Page	189,918,649,085	212,296,223,670	11.8%
Static web pages	Page	112,744,752,741	131,447,834,396	16.6%
	Proportion in total web pages	59.36%	61.9%	4.3%
Dynamic web pages	Page	77,173,896,344	80,848,389,274	4.8%
	Proportion in total web pages	40.64%	38.1%	-6.3%
Web page length (total number of bytes)	KB	9,310,312,446,467	14,815,932,917,365	59.1%
Average number of webpages per website	Page	56,710	50,197	-11.5%
Average size per page	KB	49	70	42.9%

Ⅵ. International Internet Gateway Bandwidth

By December 2015, China has 5,392,116 Mbps of international Internet Gateway bandwidth, up by 30.9% annually.



Source: CNNIC Statistical Survey on Internet Development in China 2015.12

Figure 5 International Internet Gateway Bandwidth in China and Its Growth Rate

Table 5 International Internet Gateway Bandwidths of Backbone Networks

	International Internet gateway bandwidths (Mbps)
China Telecom	3,223,629
China Unicom	1,414,868
China Mobile	645,073
China Education and Research Network	61,440
China Science & Technology Network	47,104
China International Economy and Trade Net	2
Total	5,392,116

Enterprise Application

Chapter II Preparation for Enterprise Application of Internet

Ⅰ. Use of Computers

As of December 2015, computers[5]were used by 95.2% of companies [6]in China. From 2011 to 2015, the proportion of companies using computers remained relatively high.

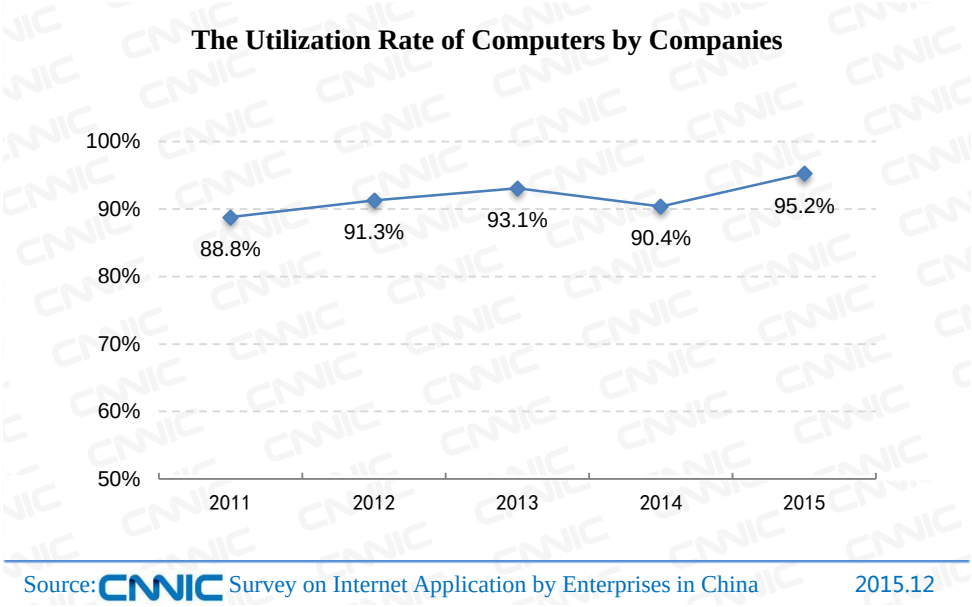


Figure 6 2011-2015 The Utilization Rate of Computers by Companies

As far as key industries and sectors were concerned, as of December 2015, the utilization rate of computers by industrial companies was 94.5%. The figure was 94.7% in the manufacturing industry, 95.9% in the service sector, and 94.2% in the wholesale, retail, lodging and catering businesses, the lowest.

[5]According to the ITU's *ICT Core Index*, computers refer to desktop computers or laptop computers, excluding those devices with certain embedded computing function, such as cellular mobile phones, Personal Digital Assistant (PDA) or TV sets.

[6]The 2011-2012 survey covered small- and medium-sized enterprises which were categorized according to Regulations on the Standard for the Classification of Small- and Medium-sized Enterprises issued by the Ministry of Industry and Information Technology. Same as below.

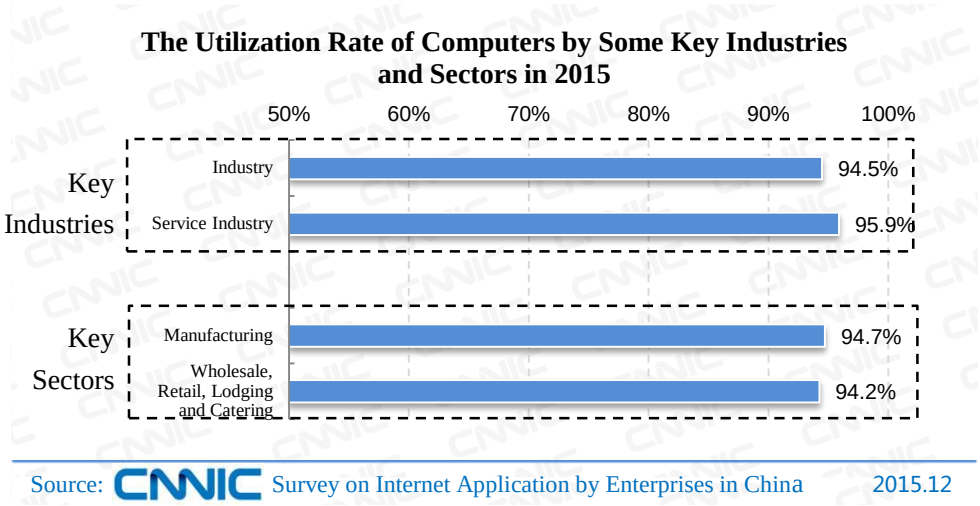


Figure 7 The Utilization Rate of Computers by Some Key Industries and Sectors in 2015

Ⅱ. Use of the Internet

As of December 2015, 89.0% of companies in China used the Internet for office work[7]. Since 2011, the proportion of companies using the Internet was close to 90% for the first time, and that of companies using computers but without access to the Internet was declining.

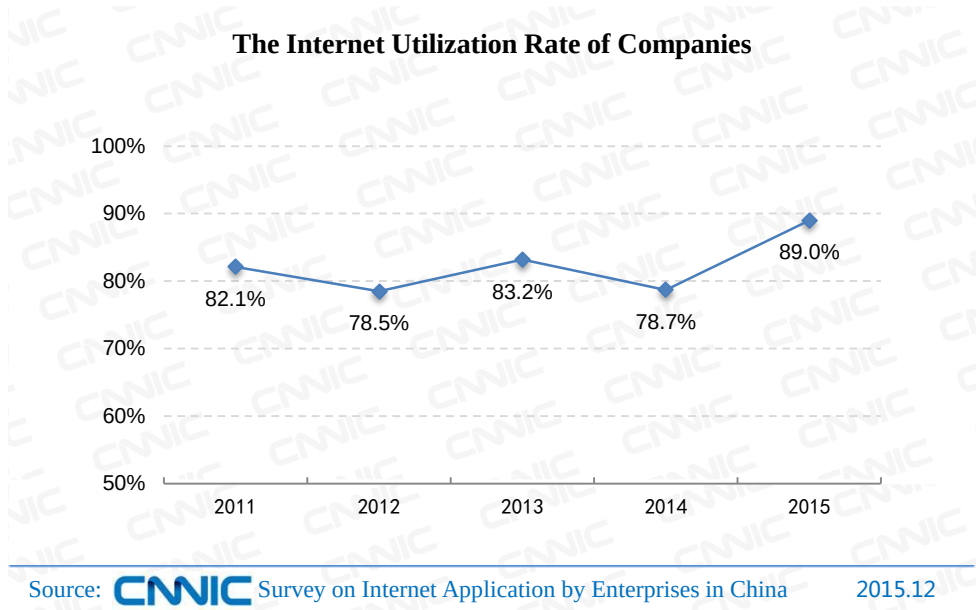


Figure 8 2011-2015 The Internet Utilization Rate of Companies

[7]According to ITU's *ICT Core Index* , it means that the Internet is directly used in all activities of the enterprises. Some enterprises use the Internet for advertisements or promotion, but do not directly use it for work, and therefore are not included. All devices (more than just computers) equipped with the Internet access function may be used as the tools to access the Internet. These include mobile telephones, PDAs, game machines and digital televisions, which may be used on fixed or mobile network.

As of December 2015, the Internet utilization rate of companies was 87.9%; that figure was 88.1% in the manufacturing industry, 90.0% in the service sector and 87.2% in the wholesale, retail, lodging and catering businesses, still at a lower level.

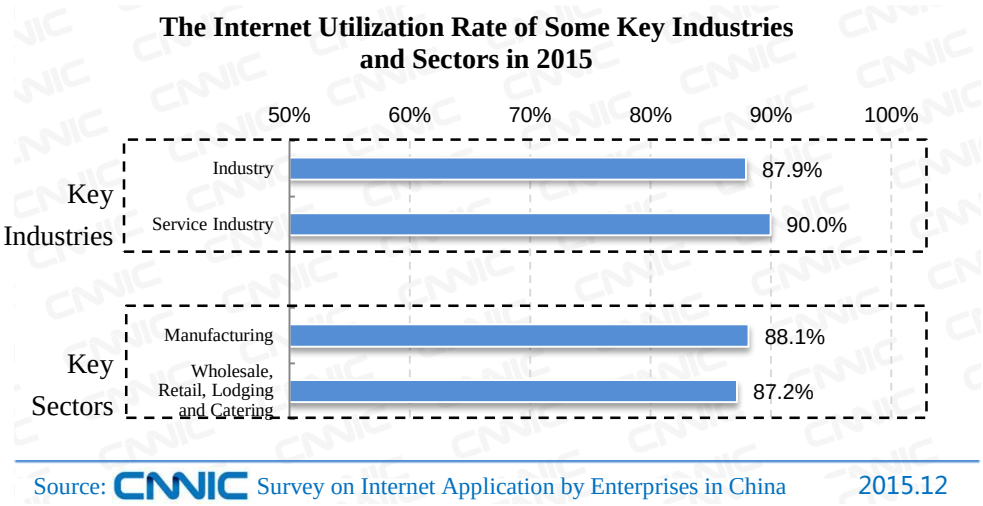


Figure 9 The Internet Utilization Rate of Some Key Industries and Sectors in 2015

III. Broadband Access

As of December 2015, the proportion of companies that accessed the Internet via fixed broadband[8] was 86.3%, and that via mobile broadband, 23.9%. The *Broadband China Strategy and Implementation Plan* proposes work objectives to "replace copper cables with optical fiber", "increase the speed and reduce the fare", and "remarkably improve the broadband application level and infiltrate mobile Internet into extensive range of areas", to consolidate cyber infrastructure construction persistently in China so that more Chinese companies can access and use the Internet in an easier way.

[8]The utilization ratios of the Internet access ways released in this survey refer to the proportion of enterprises which access the Internet in various ways among all the interviewed enterprises.

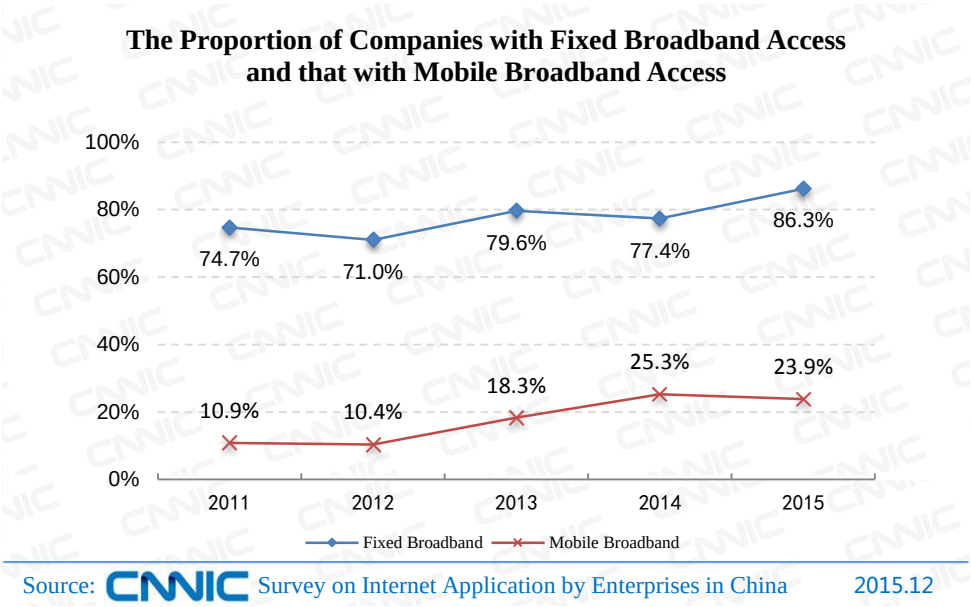


Figure 10 The Proportion of Companies with Fixed Broadband Access and that with Mobile Broadband Access 2011-2015

Compared with the broadband penetration rate among companies in member states of the Organization for Economic Co-operation and Development (OECD) in 2014, the broadband access rate of Chinese companies still lagged behind: in Finland, 100%of the companies had broadband access and that figure was also as high as 99.0% in the Republic of Korea.

Table 6 Broadband Penetration Rate among Companies in OECD Countries in 2010 and 2014 (%)

Country	*2014*	*2010*	*Country*	*2014*	*2010*
Finland	100.0	95.8	France	95.5	93.3
Holland	99.6	90.9	Ireland	95.5	86.7
Republic of Korea	99.0	98.4	Germany	95.2	89.3
Denmark	98.8	86.6	U.K.	95.2	88.0
Slovenia	98.2	87.8	Latvia	95.0	68.2
Switzerland	98.1	98.0	Italy	95.0	84.0
Canada	98.1	94.3	Hungary	94.7	84.7
Spain	97.7	95.4	Iceland	94.3	95.3
Luxembourg	97.0	87.4	Slovak Republic	93.5	78.2
Czech Republic	96.7	86.5	Norway	92.8	86.8
Colombia	96.7	--	Poland	90.4	69.0
Sweden	96.6	91.3	Turkey	89.9	88.8
Australia	96.5	94.4	Hungary	87.9	79.4
Austria	96.0	81.7	Greece	86.8	80.6
New Zealand	95.9	93.5	Japan	86.2	79.7
Estonia	95.9	88.0	Mexico	79.9	51.6
Belgium	95.7	90.4			

Data Source: OECD

Notes:

1. Broadband access includes fixed broadband and mobile broadband, with the download speed of at least 256kbit/s.
2. The data for Australia, Canada, Japan, Republic of Korea and Colombia is for the year of 2013.
3. For Japan, only enterprises with a staff number of 100 and above are included in the statistics.
4. For Mexico, the statistics is for the year of 2008 and 2014, and only enterprises with a staff number of 20 and above are included in the statistics.
5. The data for Switzerland is for the year of 2008 and that of 2011.
6. For Colombia, only manufacturing enterprises with a staff number of 10 and above and non-financial enterprises with at least 75 staff members are included in the statistics.

Chapter III Basic Internet Application of Enterprises

I. Basic Internet Activities

i. Internet Application for Basic Information Communication

Email is one of the first Internet services for information communication and also a widely accepted, cheap e-marketing channel. As of the end of 2015, among companies with Internet access, 89.0% had sent or received e-mails via the Internet in the year before, and 62.1% among the 89.0% had their own enterprise email service.

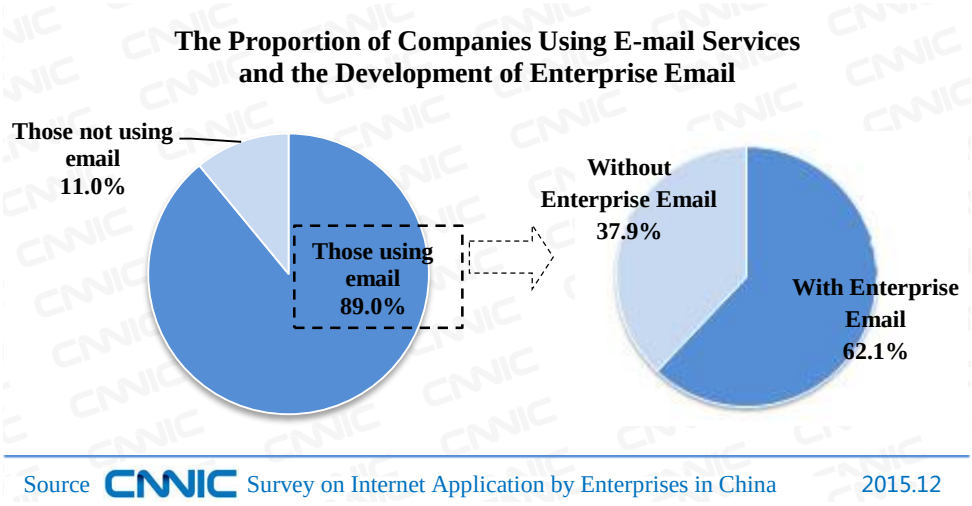


Figure 11 The Proportion of Companies Using E-mail Services and the Development of Enterprise Email

In addition, 71.9%, 67.2% and 58.3% of companies with Internet access had conducted the following three types of Internet activities, respectively: activities to obtain information on goods or services, to release information or instant messages, and to obtain information from government agencies.

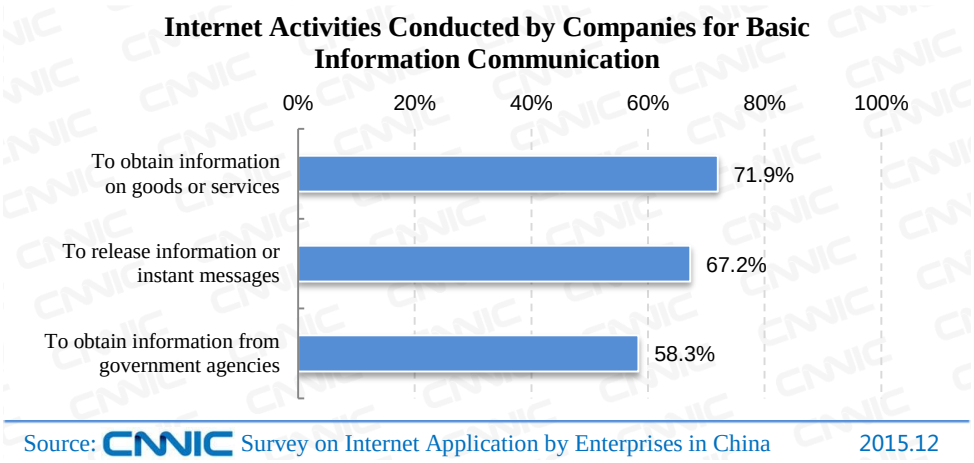


Figure 12 Internet Activities Conducted by Companies for Basic Information Communication

ii. Internet Application for Basic Internal Support

Internet is a major support for companies' internal management: 83.0% of companies with Internet access used online banking to support their finance work; 79.3% handled their affairs with government agencies on the Internet, and the high Internet use rate reflected the remarkable progress of e-governance; 57.4% launched online recruitment on social networking platforms and instant message apps in addition to releasing recruitment information on job-hunting websites and their official website; 28.1% provided Internet-based staff training.

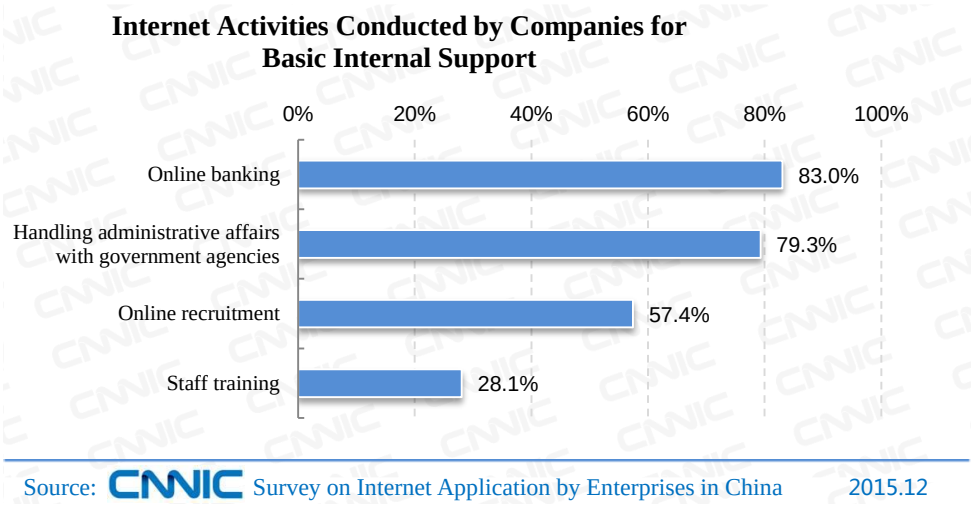


Figure 13 Internet Activities Conducted by Companies for Basic Internal Support

iii. Basic Cyber Security Measures

As of the end of 2015, 91.4% of companies had installed anti-virus and firewall software, and more than a quarter of them paid for it. The survey shows that Chinese companies had developed basic awareness of cyber security.

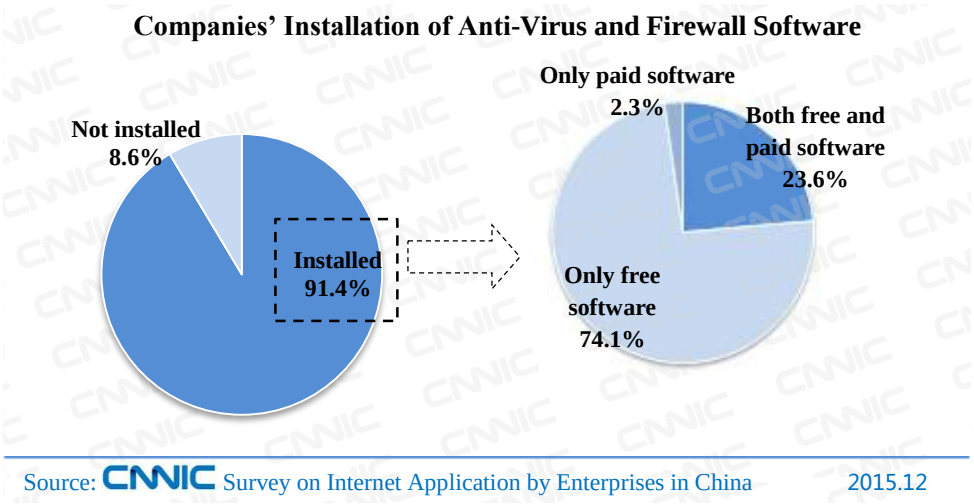


Figure 14 Companies' Installation of Anti-Virus and Firewall Software

II. The Setup of Grassroots Internet-Related Full-Time Posts

As of the end of 2015, 34.0% of companies had set up Internet-related full-time posts at the grassroots level; the figure was the lowest for micro enterprises (with a staff number of seven and below), which stood at 30.2%; and the figure was close to 40% for enterprises with a staff number of 300 and above. It's hard for small- and medium-sized enterprises to set up full-time posts for Internet activities, but as the Internet hardware and software configuration improves and Internet activities becomes increasingly extensive and in-depth, the demand for talents specialized in operation & maintenance, R&D and business operation will soar.

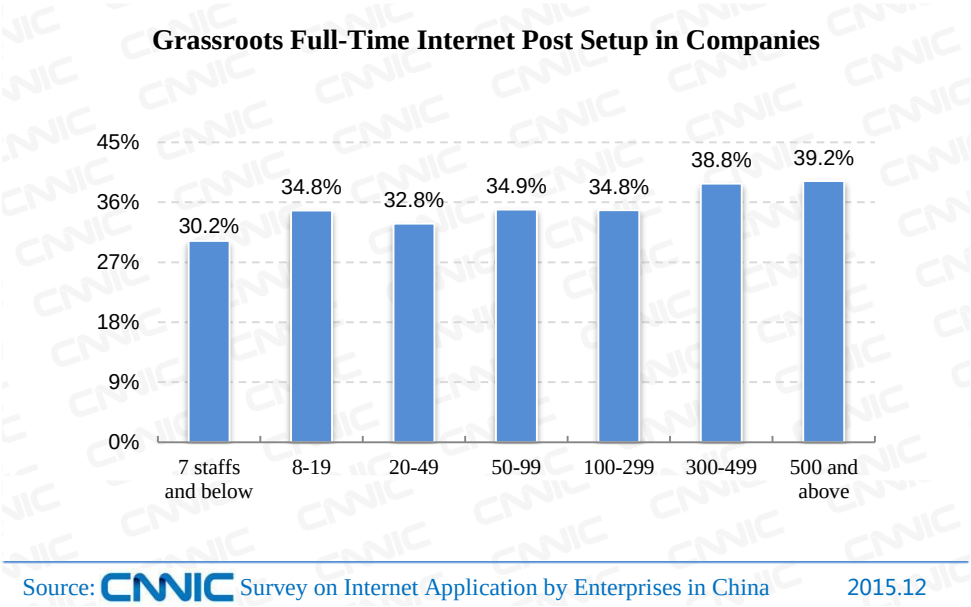


Figure 15 Grassroots Full-Time Internet Post Setup in Companies

By sector, 28.5% of industrial companies and 38.0% of companies in the service sector had full-time Internet posts, with a gap of nearly 10 percentage points. Specifically the percentage in the manufacturing industry was lower than the overall industrial level and that in wholesale, retail, lodging and catering business lower than the overall level in the service sector. To realize "smart manufacturing" and develop the modern service sector that concerns people's livelihood, we are in urgent need to arouse enterprises' more attention to grassroots specialists.

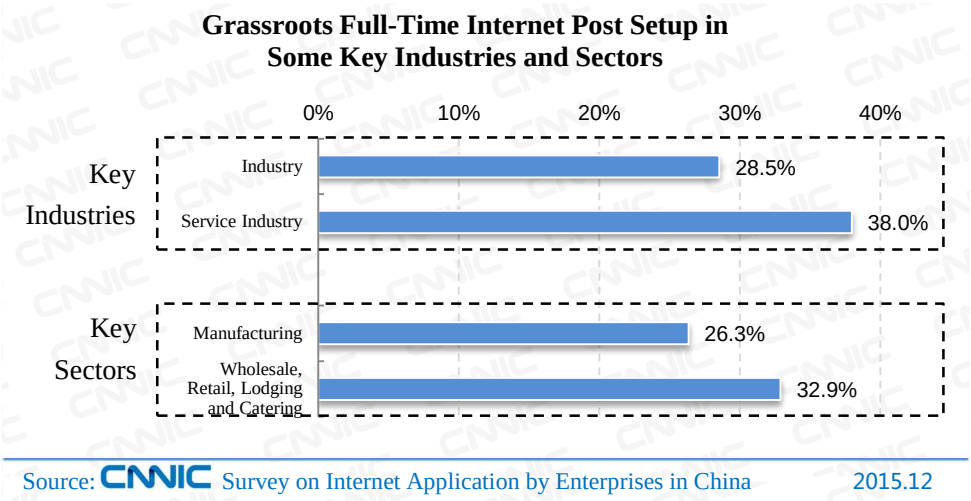


Figure 16 Grassroots Full-Time Internet Post Setup in Some Key Industries and Sectors

Chapter IV Extensive Application of Enterprise "+Internet"

I. Reform of Business Operation Procedures under "+Internet"

i. Internet-Based Reform of the Supply Chain

As of December 2015, 40.7% of companies with Internet access had deployed IT system. Among them, 44.8%, 22.0% and 18.6% had installed the office automation (OA) system, the enterprise resource planning (ERP) system and the customer relationship management (CRM) system, respectively.

The IT system is the necessary basis for supply chain management, but is not enough to reform the supply chain. The biggest difference between the IT development path adopted by Chinese companies and that adopted by companies in advanced countries lies in that in China, companies' mindset for IT construction lags behind their deployment and implementation of IT systems, and they are driven by rather external pressure than internal motive to deploy and implement IT systems. Take OEM companies for example. Though they are equipped with the ERP system, they only use it to receive orders from upstream companies and it's hard for them to translate operational data in the information system into something that can help optimize the process due to the lack of professionals in this regard and the vision for change.

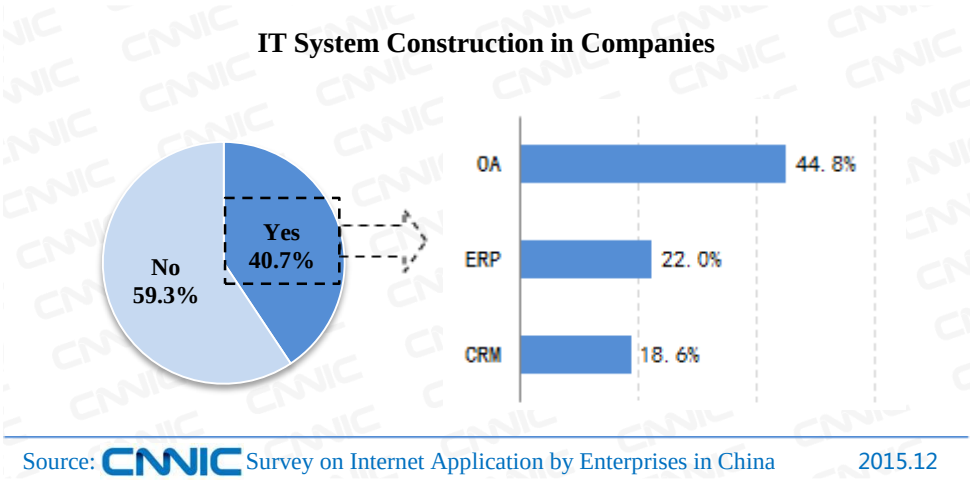


Figure 17 IT System Construction in Companies

By December 2015, 32.6% of the companies in China had launched online sales, an increase over the previous four years. Driven by the boosting e-retail market in China, the number of companies engaged in online sales and the volume of their online sales had been in rapid growth.

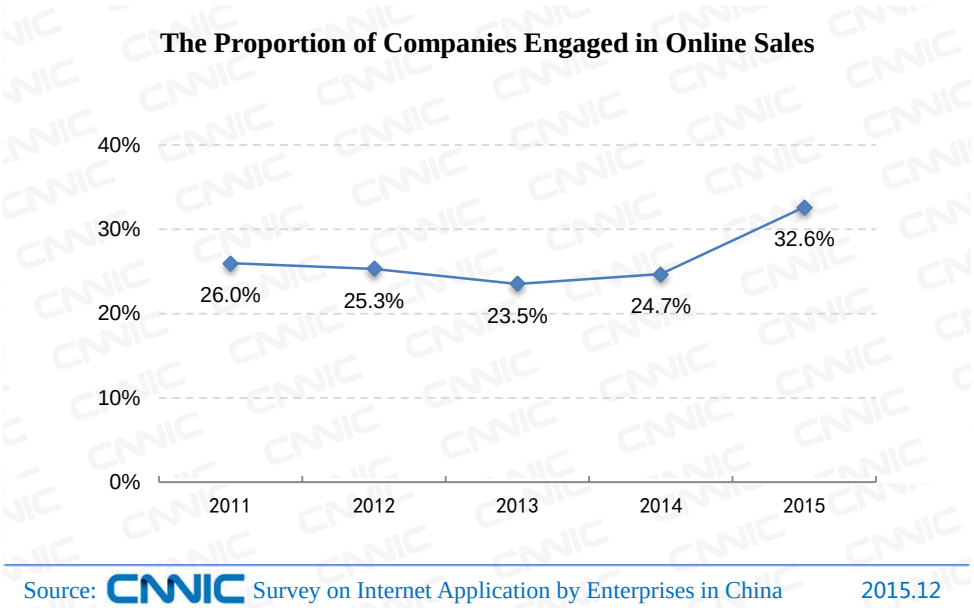


Figure 18 2011-2015 Proportion of Companies Engaged in Online Sales

The enterprises that carried out online procurement had accounted for 31.5% of Chinese enterprises by December 2015. Earlier OECD statistical data shows that since companies in advanced countries are driven mainly by their internal reform to develop IT, more companies are engaged in online purchase than online sales, leading to an earlier and more mature B2B mode. To accomplish the five tasks raised at the 2015 Central Economic Working Conference, namely to "reduce production capacity, de-stock, de-leverage, cut costs and make up weaknesses", B2B e-

commerce will play a growing role in driving economic development and facilitating the structural transformation in China.

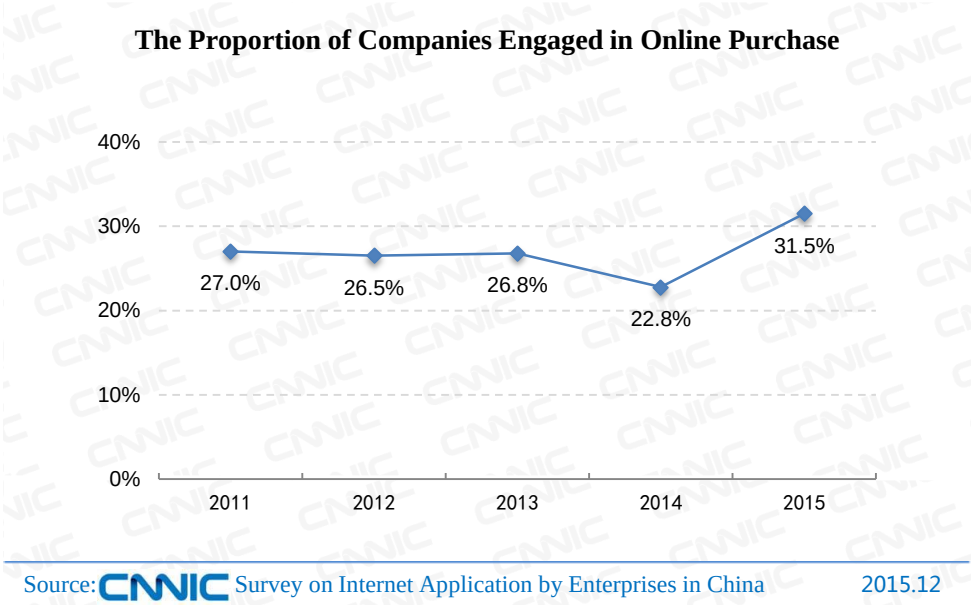


Figure 19 The Proportion of Companies Engaged in Online Purchase 2011-2015

As of December 2015, 33.8% of companies had launched Internet-based marketing activities[9]. Internet is still the most favored promotional channel for companies.

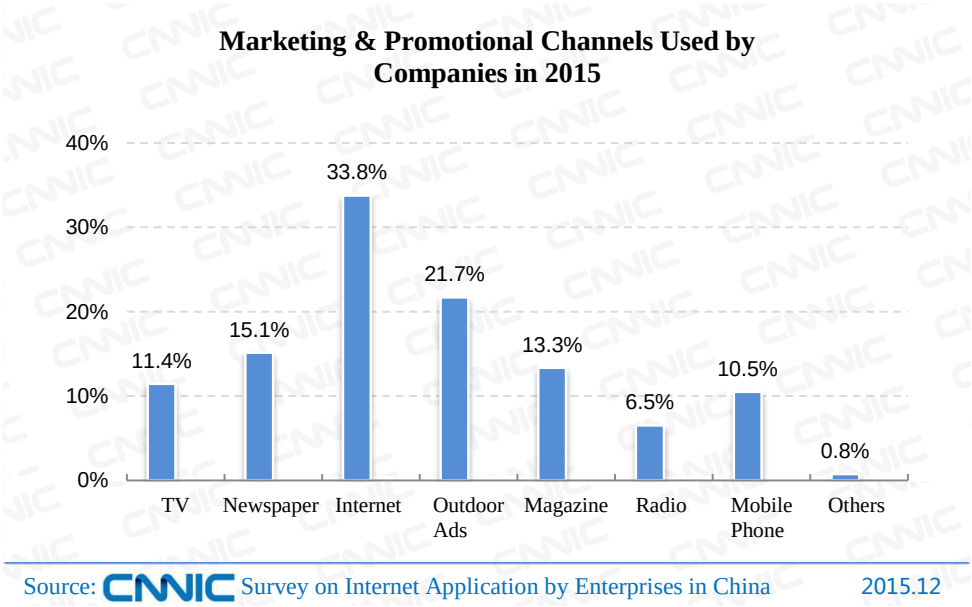


Figure 20 Marketing& Promotional Channels Used by Companies in 2015

[9]According to the ITU's *ICT Core Index*, Internet-based marketing refers to using the Internet to carry out marketing and/or promotion activities such as advertisements or promotions carried out by enterprises themselves or via their agents/ advertisement companies, including paid promotions and free promotions.

Internet-based marketing and e-commerce application are closely related to each other. The year of 2015 was a golden year for Internet-based marketing and the percentage of companies engaged in it went up by 9.6 percentage points from 2014.

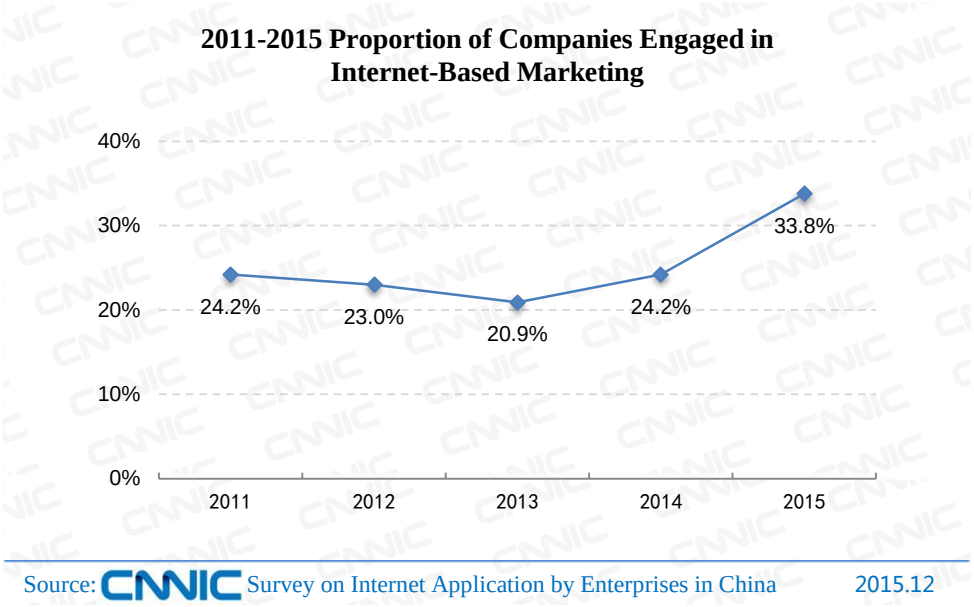


Figure 21 The Proportion of Companies Engaged in Internet-Based Marketing 2011-2015

The instant messaging service is companies' favorite marketing tool, used by 64.7% of them; it's followed by e-commerce platforms and search engines, with 48.4% and 47.4% usage rate respectively.

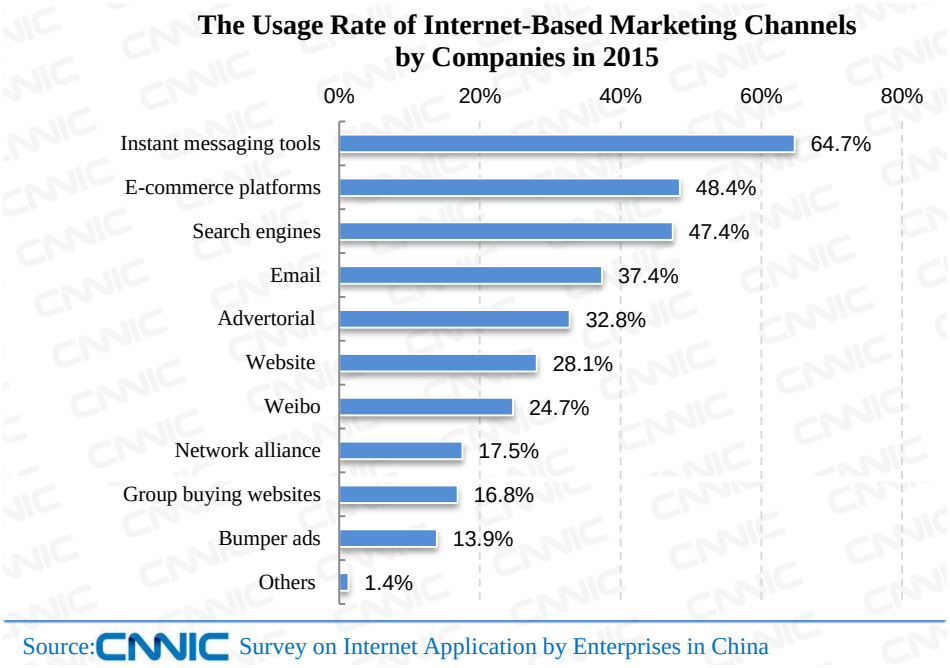


Figure 22 The Usage Rate of Internet-Based Marketing Channels by Companies in 2015

ii. Cyber Security System Construction

By December 2015, 8.9% of companies had deployed the hardware protection system for cyber security and 17.1% the hardware and software integrated protection system.

Cyber security has become a major issue for China's Internet development. On one hand, advanced technologies and creative applications, while facilitating the rapid development of the Internet industry, can be used against cyber security. In addition to virus Trojan horse, phishing websites, and system vulnerabilities, malicious program attacks, distributed denial of service (DDoS) attacks, and smart hardware worms have become frequent, making the overall cyber security situation grimmer day by day. On the other, China is comparatively weak in technological capabilities of cyber security protection and the R&D and service capacity of the cyber security industry is to be improved.

Though only a small number of companies have adopted hardware protection and hardware-software integrated protection for cyber security, as more and more business activities moved to the Internet, companies will pay growing attention to cyber security and have greater demand for it. This in turn will accelerate the improvement of cyber security management system and technological capabilities of cyber security protection in China, thus enhance the R&D and service capacity of the cyber security industry and stimulate the enterprise-level market of cyber security service.

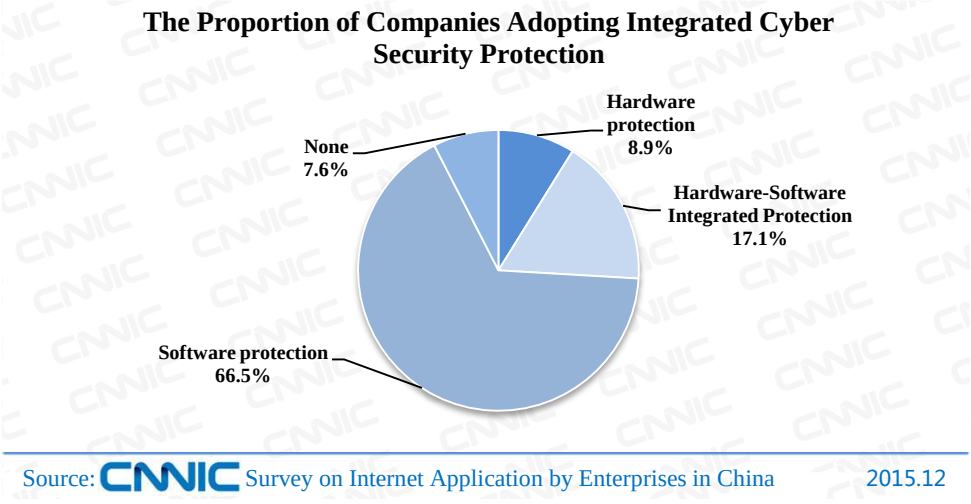


Figure 23 The Proportion of Companies Adopting Integrated Cyber Security Protection

II. The Setup of Full-time Internet Teams and IT Training for Employees

By December 2015, 24.4% of companies had set up full-time teams responsible for Internet-related operation & maintenance, development, e-commerce and e-marketing. The existence of such teams shows that Internet has become an indispensable part of normal business operation.

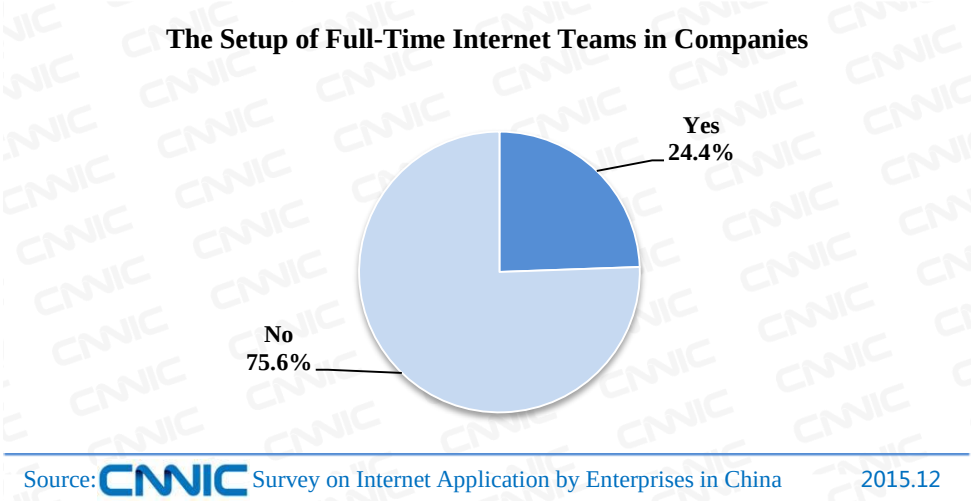


Figure 24 The Setup of Full-Time Internet Teams in Companies

The survey shows that companies scored the IT training for their staffs at 4.3 points, a medium-level score. Different from Internet-based staff training, IT training for staffs is aimed to help the company build up technology-centered competitiveness. IT training that advances with the time is necessary in an era when Internet has become a management tool and means for the whole supply chain.

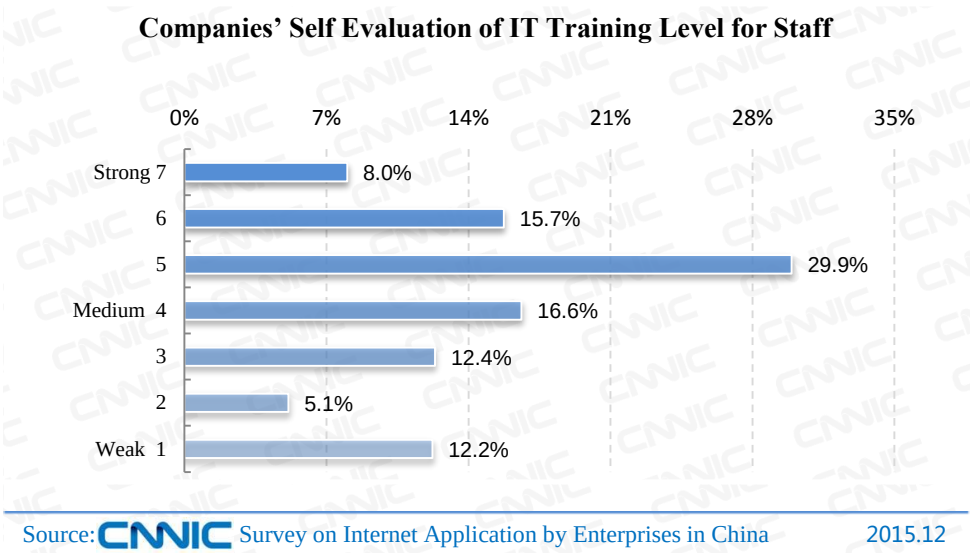


Figure 25 Companies' Self Evaluation of IT Training Level for Staff

Chapter V In-Depth Integration of Enterprises and "Internet+"

I. Cognition and Adoption of Creative Technologies and Modes

i. E-marketing in the Age of Mobile Internet

Among companies with the experience in e-marketing, 35.5% did so via mobile Internet, of whom 21.9% had used paid promotion. As more and more users are moving to the mobile end, mobile marketing will become an important channel for business promotion.

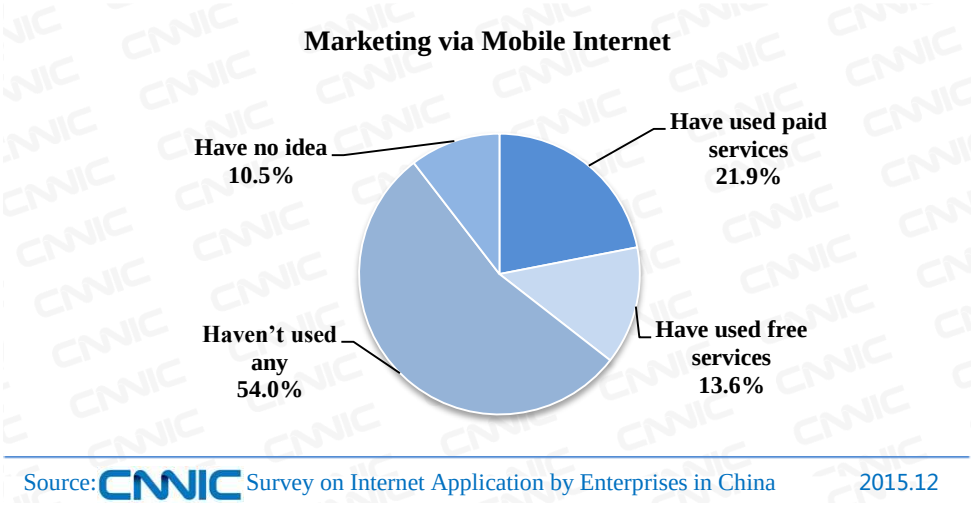


Figure 26 Marketing via Mobile Internet

Among all kinds of mobile marketing tools, WeChat is the favorite of companies, used by 75.3% of them. So far, there are three mainstream ways to promote goods or services on the WeChat platform: to put up ads on "Moments"; to promote via public accounts on WeChat; and to operate WeChat shops. The first option is mainly for Fortune 500 companies while the last two adapt better to micro-, small- and medium-sized enterprises. In addition, 52.7% of companies engaged in mobile marketing had built their mobile official website.

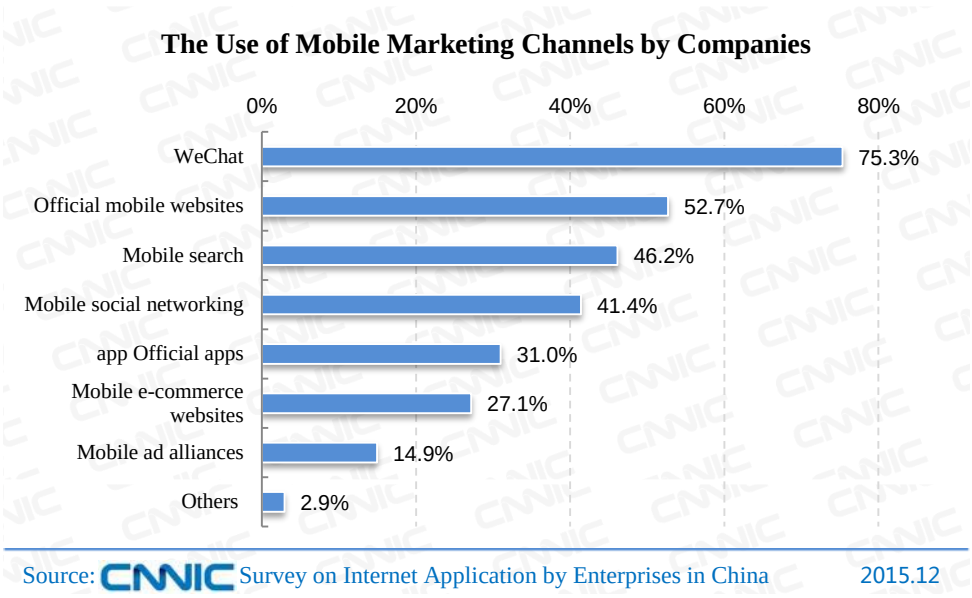


Figure 27 The Use of Mobile Marketing Channels by Companies in 2015

ii. The Cognition and Application of Cloud Computing, the Internet of Things and Big Data

The year of 2015 saw the rapid rise of cloud computing, the Internet of Things, big data technology and related businesses. The flourishing of related new services and the creation of new applications and new business forms have promoted the creative, integrated development of traditional industries. From the perspective of cognition, over half of the companies are aware of these three types of technologies and over 10% of them had adopted, or planned to adopt related technologies.

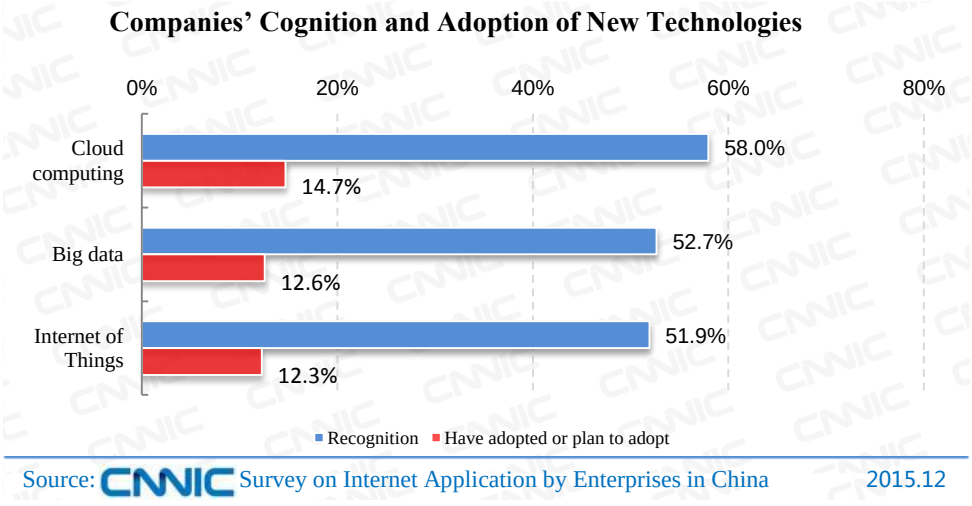


Figure 28 Companies' Cognition and Adoption of New Technologies

Though poorly cognized and adopted by businesses, the Internet of Things does play a key role in transformation and upgrading of the commercial circulation industry. The State Council issued Guiding Opinions on Promoting the Orderly, Healthy Development of the Internet of Things in 2013. Over years of development, China has scored progress in the technology for the Internet of Things and made breakthroughs in radio frequency identification technologies and sensor development; industrial application has produced initial fruits and successful application of related technologies is repeated in areas of industry, agriculture, transport, energy & electricity, food safety, medicine & healthcare, smart home, and smart city construction, etc.

By December 2015, 68.8% of companies had heard of the cloud service but only 15.2% had used it; 53.6% had heard of but never used it, among which only 25.8% would consider using it.

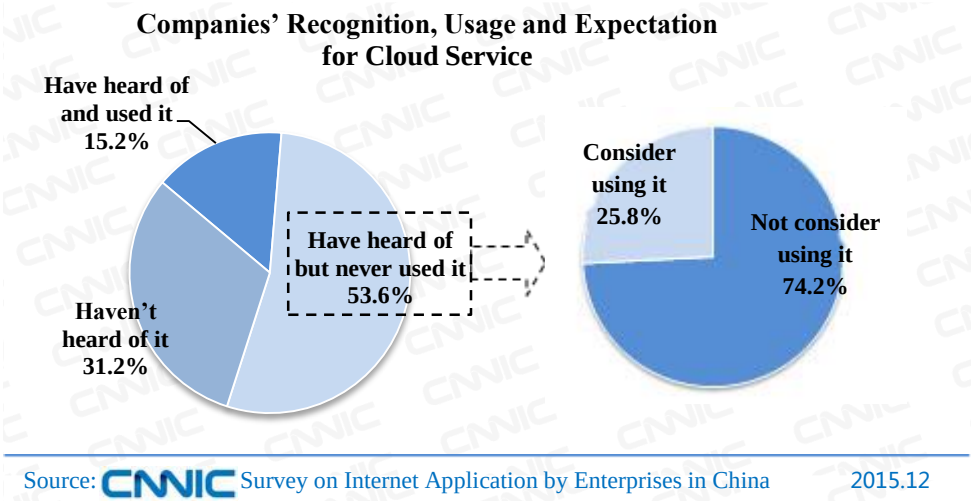


Figure 29 Companies' Cognition, Usage and Expectation for Cloud Service

In fact, before the word "cloud service" frequents newspapers, the technology, represented by Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS) and Infrastructure-as-a-Service (IaaS), has been widely applied to multiple kinds of enterprise-level Internet applications, such as SaaS to email and e-disk services, PaaS to developer.baidu.com and open.weixin.qq.com, and IaaS to aliyun.com and Microsoft's Azure service, etc. According to IDC's Studies Tracking Public Cloud Service in China (First Half of 2014), from 2014 to 2018, China's public cloud service market will grow from USD 700 million to USD two billion, and the IaaS market share will show an upward trend, reflecting Chinese companies' improved capacity in IT system construction and management.

iii. Cognitionand Developmentof Creative Services and Smart Mnufacturing

One-stop services, customized services and the social collaboration platform, all of which are creative service modes, are known by 69.2%, 51.4% and 41.1% of companies in the service sector, respectively, and launched or to be launched by 22.0%, 14.9% and 10.1%, respectively.

During the 12th Five-Year Plan period, China's service sector grew rapidly and its added value was taking an increasing portion of GDP year by year. Along with the in-depth integration of Internet and the traditional service sector, the service mode is evolving and changing in practice based on the information network technology and Internet mindset, to drive the modern service sector into prosperity in short time. As a result, the "Internet+" service sector will play a bigger role in national economy.

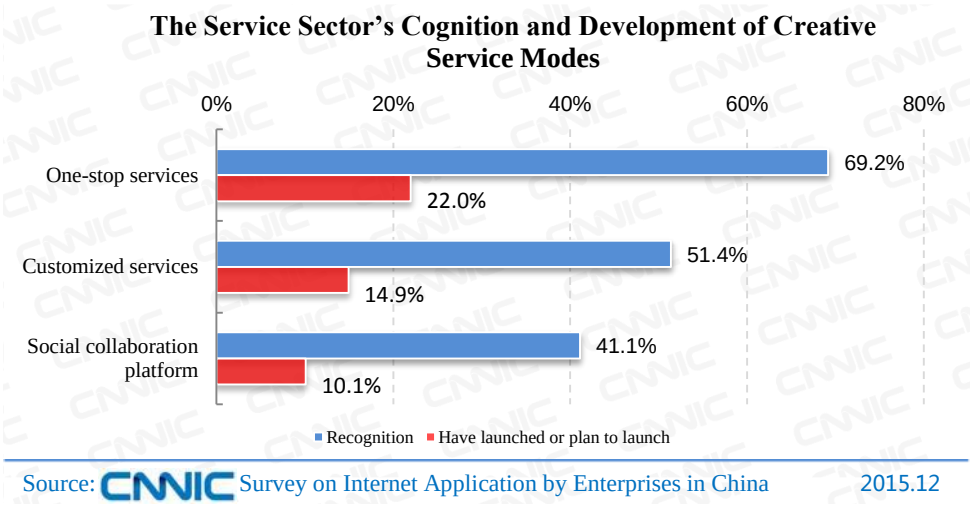


Figure 30 The Service Sector's Cognition and Development of Creative Service Modes

For the manufacturing industry, automatic manufacturing and industrial robots are the basis for smart manufacturing. The survey shows that 19.9% of manufacturing enterprises had started related work and 11.0% planned to do so; flexible and customized production is based on the application of smart equipment, with the incorporation of advanced analysis and managerial methods and creativity. So far 12.8% of manufacturing companies had taken actions in these two aspects and 16.8% planned to do so.

In 2015, the "Internet+" action plan listed priority actions to be made for "Internet+" collaborative manufacturing. One of the key tasks for the "Made in China 2025" strategy is to advance the in-depth integration of ICT and industry. Internet-centered IT is the key to it. To make

smart manufacturing a reality, we should especially enhance the cognition from small- and medium-sized manufacturing enterprises, and lower the threshold for the application of advanced technologies and smart equipment, such as reducing the cost, making domestically produced smart equipment more high-tech, and optimizing the industrial support, so as to translate the strategic planning of smart manufacturing into real actions.

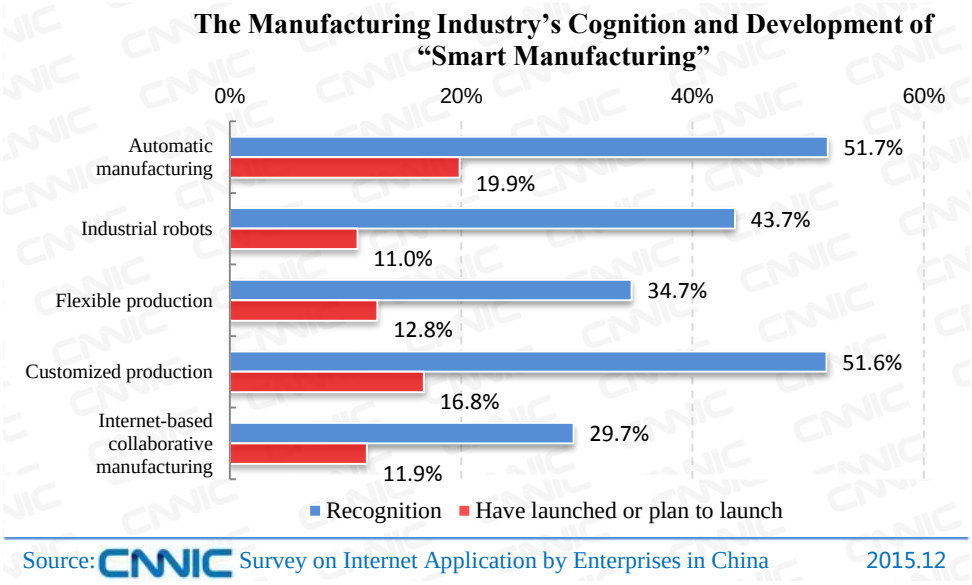


Figure 31 The Manufacturing Industry's cognition and Development of "Smart Manufacturing"

II. The Integration of Internet Planning and Corporate Strategy

The survey finds that 13.0% of companies have their executives lead Internet planning. The in-depth integration of "Internet+" and traditional enterprises is not only about the application of technology and equipment, but more about the introduction of "customer first", "rapid iteration" and "universally beneficiary services" advocated by the Internet mindset to the ideological and strategic level. Only after policy makers shift their attention to the role of Internet and elevate the Internet from an instrument, channel to the strategic level can we fully give play to the pioneering role of Internet.

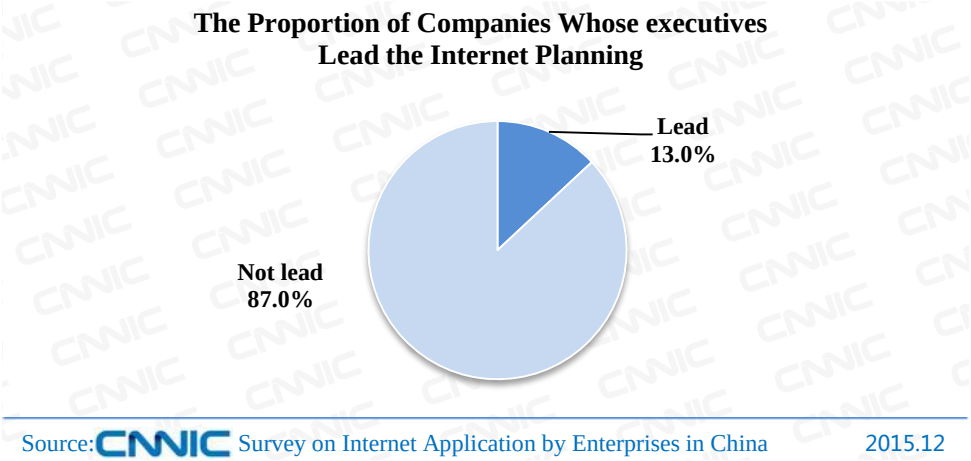


Figure 32 The Proportion of Companies Whose Decision Makers Lead the Internet Planning

III. The Role of Internet Expected by Companies

So far companies are positive and optimistic about the role "Internet+" is to play in traditional industries. Over 70% of companies believe that Internet will play a positive role in nine aspects closely concerning their survival and prosperity. They particularly recognize the role of "Internet+" in the following five aspects: market economy environment, industry prospects, sales, purchase and human resources. In contrast, companies lower their expectation for the role of Internet in aspects of production & manufacturing as well as product design and R&D, for Internet needs the help of automatic manufacturing and smart manufacturing equipment such as industrial robots, all of which require huge investment, in order to play its tremendous role.

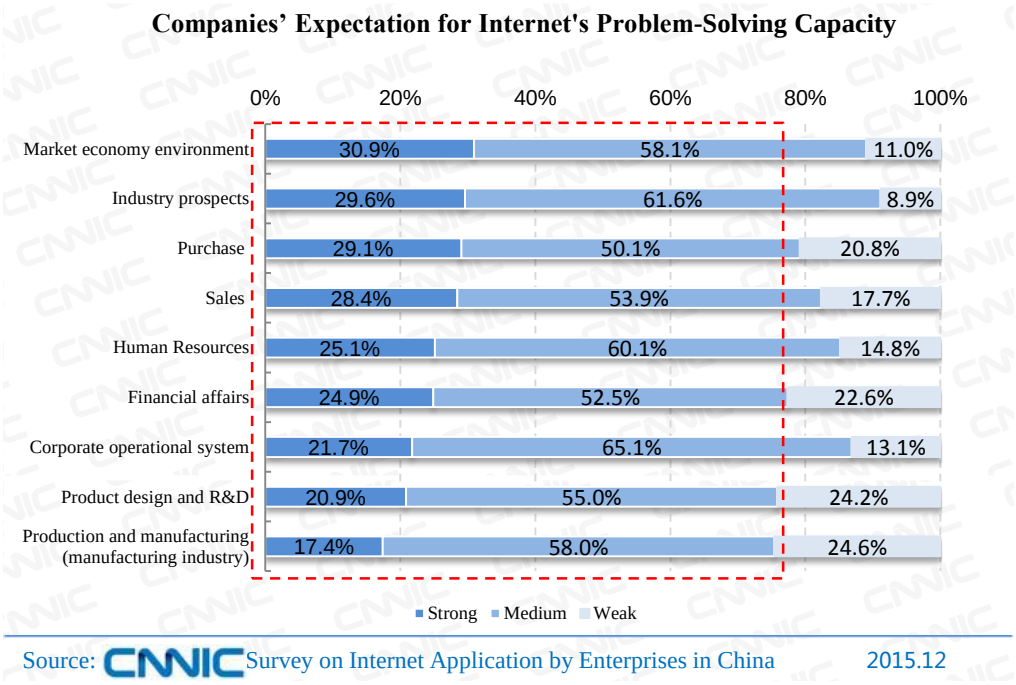


Figure 33 Companies' Expectation for Internet's Problem-Solving Capacity

Personal Application

Chapter VI The Size and Structure of Internet users

Ⅰ. The Size of Internet Users

i. Overall Size of Internet Users

In December 2015 China had 688 million Internet users, up 39.51 million over the previous year. The Internet penetration rate reached 50.3%, up 2.4 percentage points from the end of 2014.

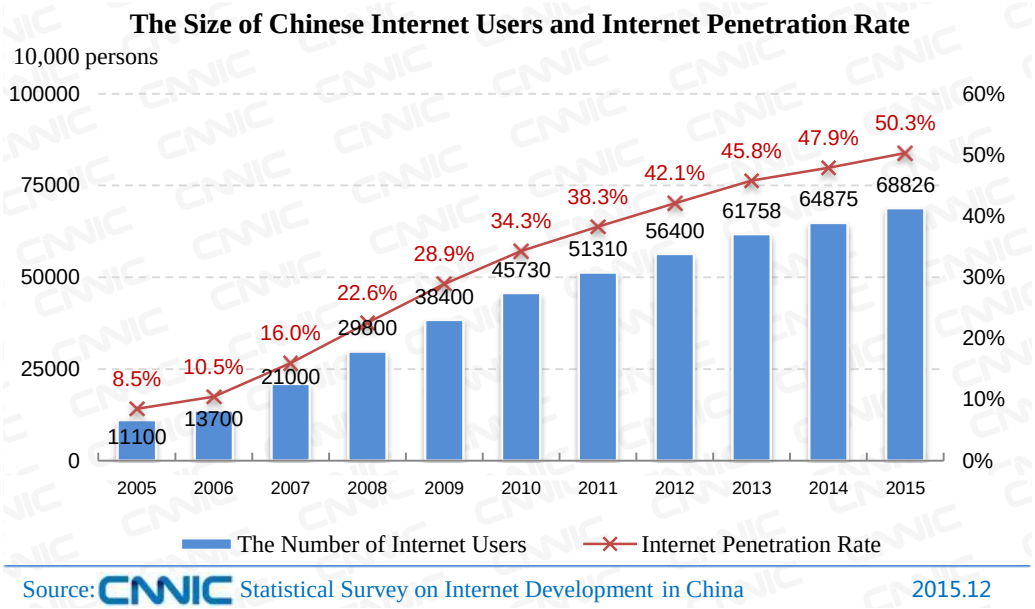


Figure 34 The Size of Chinese Internet Users and Internet Penetration Rate

In the course of Internet development in China, the growing number of Internet users is consolidating the basis for Internet to integrate deeply with the economy and the society. The survey result shows that in 2015, the mobile phone was the most popular device used for Internet access by new Internet users, by 71.5% of them, up by 7.4 percentage points from the end of 2014. Among the new Internet users in 2015, 46.1% were under 19, and 46.4% were students, and entertainment and communication were their two biggest reasons to access the Internet. Smart phones, portable and easy to use, met their demands. Only 39.2% of new Internet users used desktops, lower than the figure in 2014.

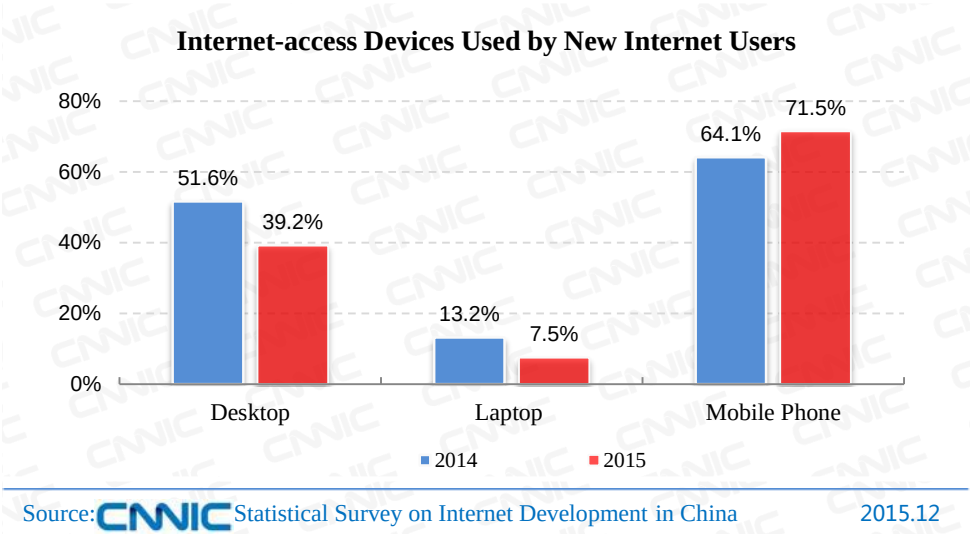


Figure 35 Internet-access Devices Used by New Internet Users

The lack of network knowledge and application skills remained the main cause of the big digital gap between netizens and non-netizens. The survey result shows that 60.0% of non-netizens do not access the Internet because they don't understand the computer/Internet; 30.8% because they are either too old or too young; and 9.4% because they have no devices such as the computer to access the Internet, lower than the figure at the end of 2014.

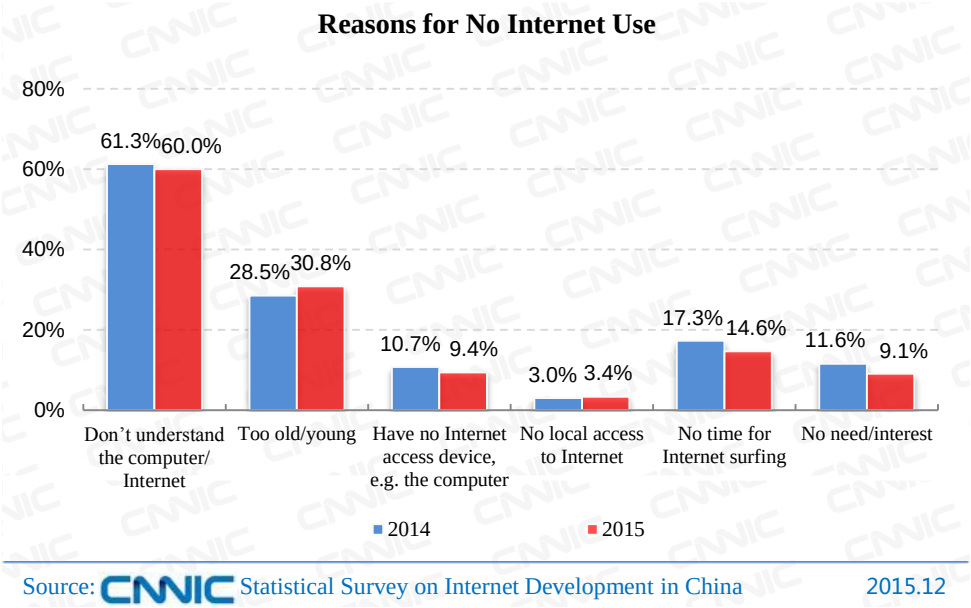


Figure 36 Reasons for No Internet Use

As the easily converted population shrinks gradually, the conversion rate of non-Internet users is slowing in China. The survey finds that among non-Internet users, 11.8% say they will definitely or likely access the Internet in the future while 72.9% say they won't or probably won't access the

Internet at all, so to convert non-Internet users will be a tough challenge. The features of the group of non-Internet users, their interest in accessing the Internet, their Internet literacy and skills and regional IT development level are all key factors deciding whether they would be converted.

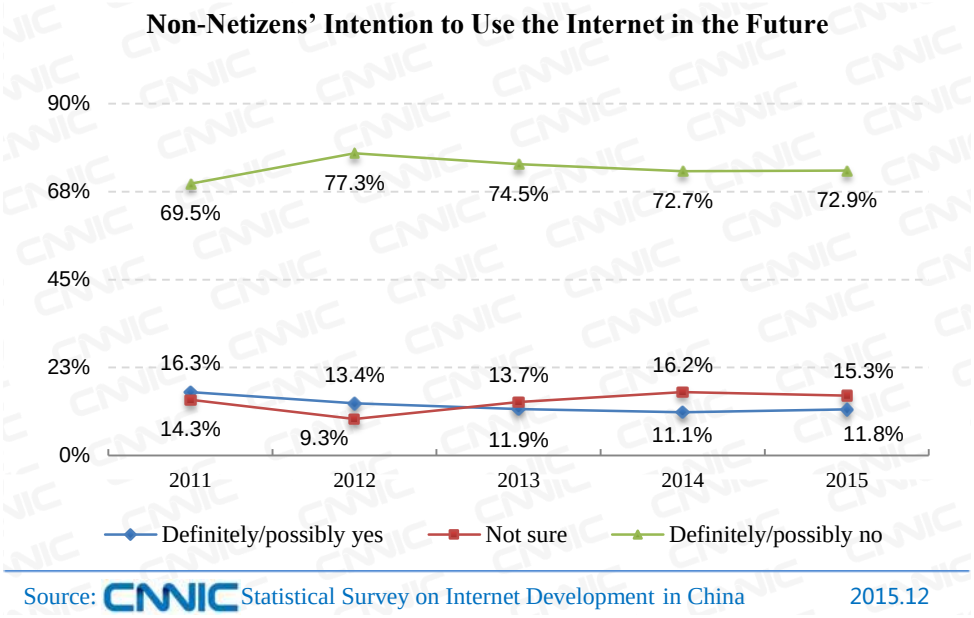


Figure 37 Non-Netizens' Intention to Use the Internet in the Future

ii. The Size of Mobile Internet Users

As of December 2015, the number of mobile Internet users in China reached 620 million, an increase of 63.03 million from the end of 2014. The percentage of Internet users using the mobile phone to access the Internet climbed up from 85.8% in 2015 to 90.1%, and the mobile phone is still the most important device boosting the growth of Internet users. There were 127 million mobile Internet users, accounting for 18.5% of the country's Internet users.

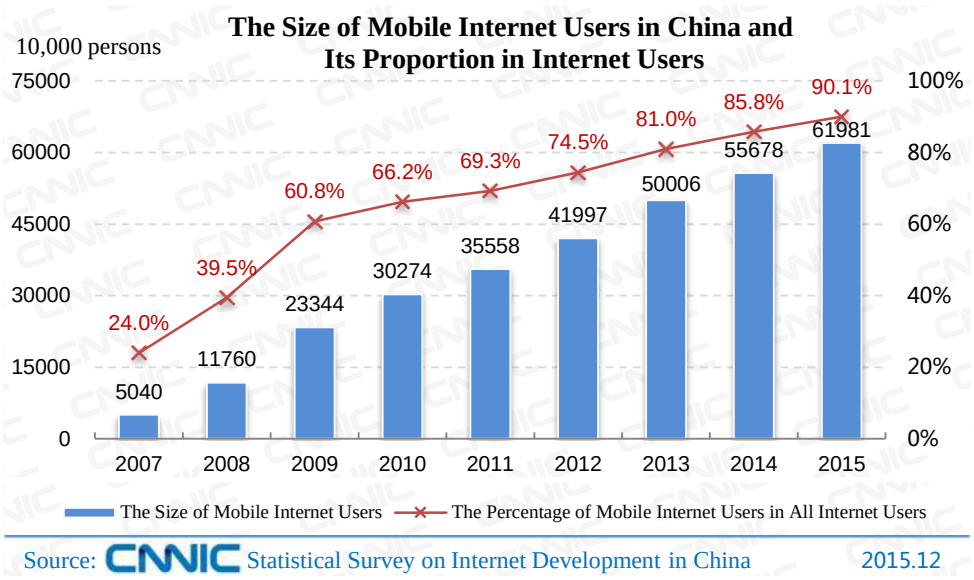


Figure 38 The Size of Mobile Internet Users in China and Its Proportion in Internet Users

As the network environment improves and mobile Internet technology advances, more and more demands for all sorts of mobile Internet applications emerge. From basic demands for entertainment, communication and information inquiry, to commercial trade, e-finance, to public services such as education, medical services and transport, mobile Internet has shaped a brand new form of social life and is changing the daily life of its users in a subtle way. In the future, mobile Internet applications will be more relevant to life, attract more users from third- and fourth-tiered cities and rural areas, and further increase the Internet penetration rate in China.

iii. The Size of Internet Users in Provinces

By December 2015, 26 out of 31 Chinese provinces, autonomous regions and municipalities directly under the central government boasted more than 10 million Internet users each, and Gansu province was new on the list; 14 had an Internet penetration rate above the national average, with Hainan province and Inner Mongolia new on the list.

Because of the gap in local economic development and Internet infrastructure construction, the Internet penetration rate varies from province to province and the digital divide still exists. In the future as mobile Internet devices become more popular and the Broadband China strategy is further implemented, the regional gap in Internet development in China will be narrowed.

Table 7 The Netizen Population and Internet Penetration Rate in Different Provinces (Municipalities Directly under the Central Government and Autonomous Regions) of

Mainland China in 2015

Province	Size (10,000 persons)	Penetration rate	Size growth	Ranking of the penetration rate
Beijing	1,647	76.5%	3.4%	1
Shanghai	1,773	73.1%	3.3%	2
Guangdong	7,768	72.4%	6.6%	3
Fujian	2,648	69.6%	7.1%	4
Zhejiang	3,596	65.3%	4.0%	5
Tianjin	956	63.0%	5.8%	6
Liaoning	2,731	62.2%	5.9%	7
Jiangsu	4,416	55.5%	3.3%	8
Xinjiang	1,262	54.9%	10.8%	9
Qinghai	318	54.5%	9.9%	10
Shanxi	1,975	54.2%	7.5%	11
Hainan	466	51.6%	10.8%	12
Hebei	3,731	50.5%	3.6%	13
Inner Mongolia	1,259	50.3%	10.3%	14
Shaanxi	1,886	50.0%	8.1%	15
Ningxia	326	49.3%	10.6%	16
Shandong	4,789	48.9%	3.3%	17
Chongqing	1,445	48.3%	6.5%	18
Jilin	1,313	47.7%	5.7%	19
Hubei	2,723	46.8%	3.7%	20
Tibet	142	44.6%	15.3%	21
Heilongjiang	1,707	44.5%	6.8%	22
Guangxi	2,033	42.8%	10.0%	23
Sichuan	3,260	40.0%	7.9%	24
Hunan	2,685	39.9%	4.1%	25
Anhui	2,395	39.4%	7.7%	26
Henan	3,703	39.2%	6.6%	27
Gansu	1,005	38.8%	5.7%	28
Jiangxi	1,759	38.7%	14.0%	29
Guizhou	1,346	38.4%	10.1%	30
Yunnan	1,761	37.4%	7.2%	31
The whole country	68,826	50.3%	6.1%	--

iv. The Size of Rural Internet Users

By December 2015, China had 195 million rural Internet users, accounting for 28.4% of the country's total Internet users, an increase of 16.94 million, 9.5% from the end of 2014; 493 million urban Internet users, accounting for 71.6%, an increase of 22.57 million, or 4.8% from the end of 2014. The fact that rural Internet users are taking up a growing percentage of the Internet user base, growing twice as fast as their urban counterparts, is evidence of the fruitful work of rural Internet popularization in 2015.

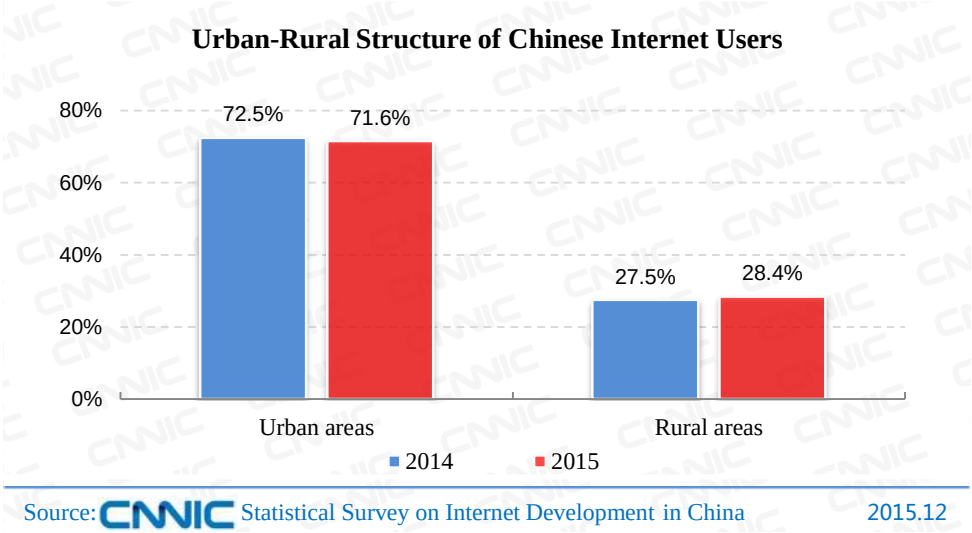


Figure 39 Urban-Rural Structure of Chinese Internet Users

Ⅱ. The Structure of Internet Users

i. Gender Structure

By December 2015, the male to female ratio was 53.6:46.4 among Chinese Internet users, showing that their gender structure tends to be balanced.

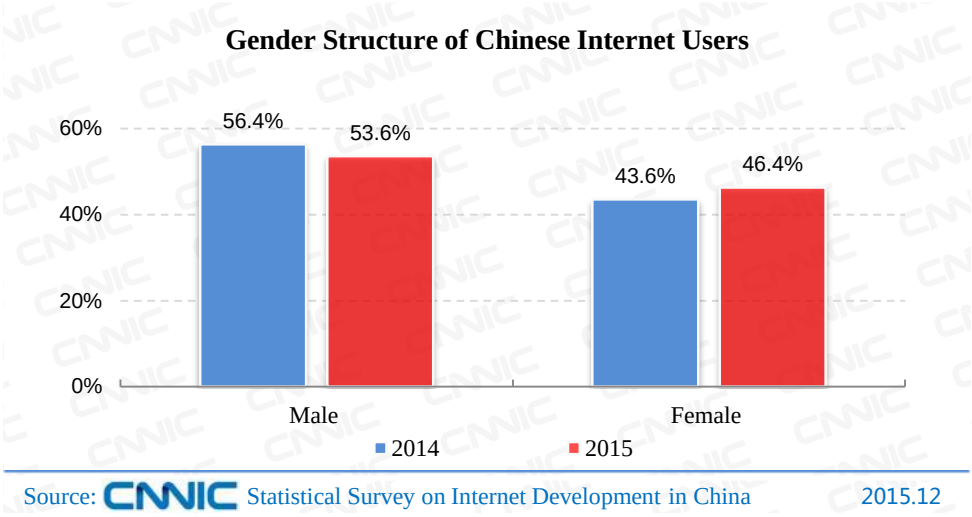


Figure 40 Gender Structure of Chinese Internet Users

ii. Age Structure

By December 2015, 75.1% of Chinese Internet users aged between 10 to 39, 29.9% 20 to 29, 21.4% 10 to 19 and 23.8% 30 to 39. Compared with the end of 2014, the percentage of those under 10 and of those above 40 both rose, indicating that the Internet is continuing to penetrate into these two age groups.

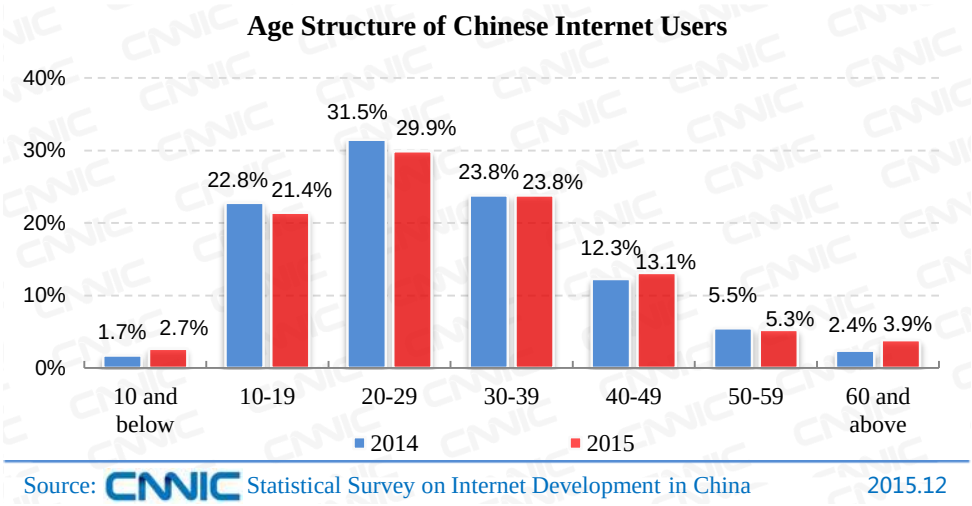


Figure 41 Age Structure of Chinese Internet Users

iii. Education Structure

By December 2015, most netizens of China were those with a secondary education level: junior high school students constituted 37.4% of the Chinese netizen population, and this percentage was 29.2% for senior high school/vocational school/technical school students.

Compared with the data at the end of 2014, the percentage of netizens with primary school education and below rose by 2.6 percentage points, showing that Internet is continuing to penetrate among those poorly educated.

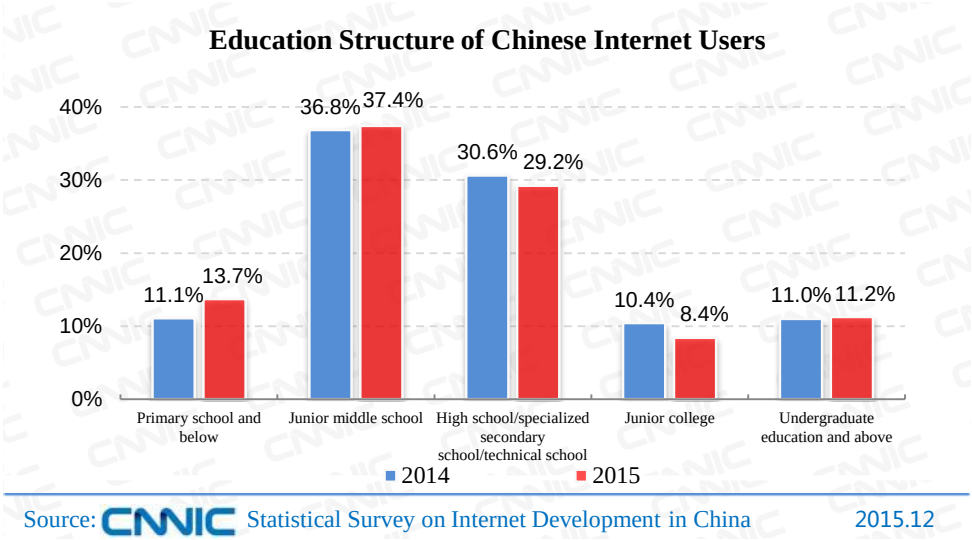


Figure 42 Education Structure of Chinese Internet Users

iv. Occupational Structure

By December 2015, 25.2% of Chinese netizens were middle school students; 22.1% were self-employed persons/freelancers; and 15.2% were enterprise managers/ordinary staff members.

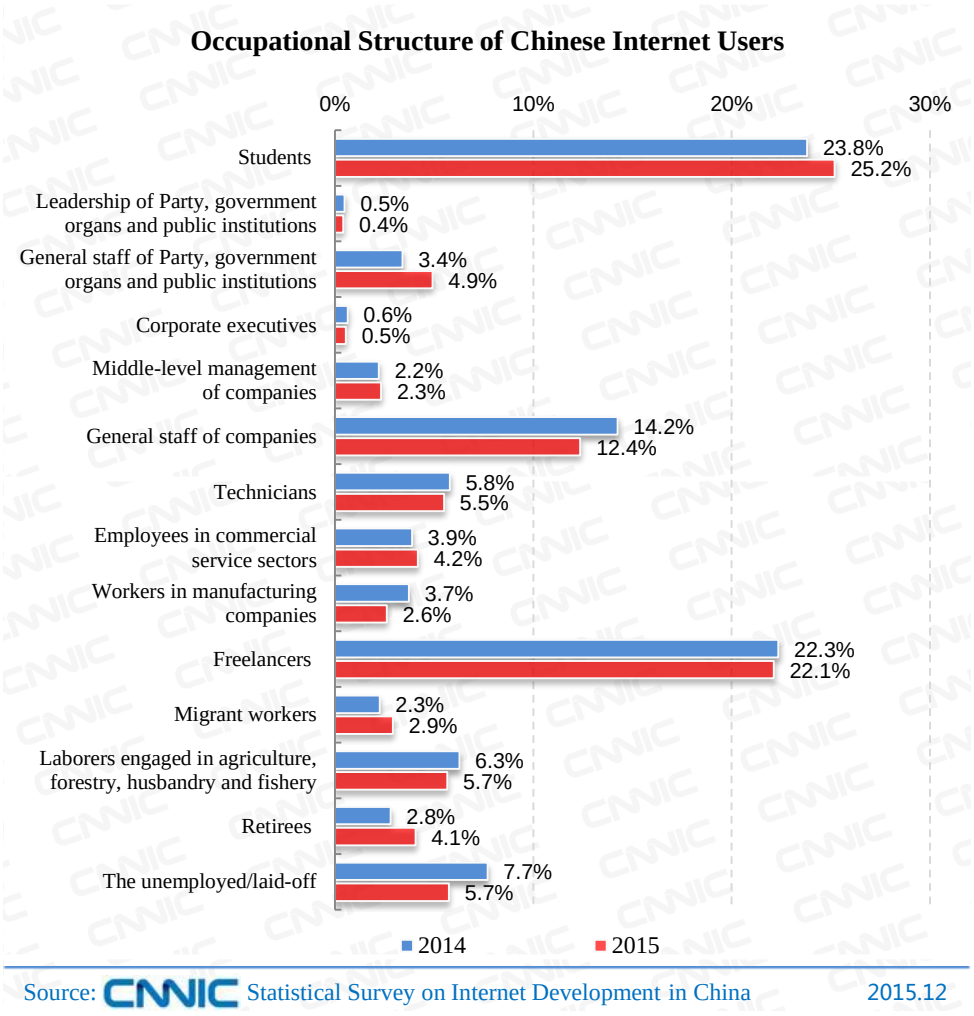


Figure 43 Occupational Structure of Chinese Internet Users

v. Income Structure

By December 2015, the proportions of netizens with a monthly income[10] of RMB 2,001-3,000 and RMB 3,001-5,000 were18.4% and 23.4%, respectively, the highest among all income groups. Netizens' income is growing as the economy develops. Compared with the end of 2014, the percentage of netizens with the income above RMB 3,000 rose by 5.4 percentage points.

[10]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.

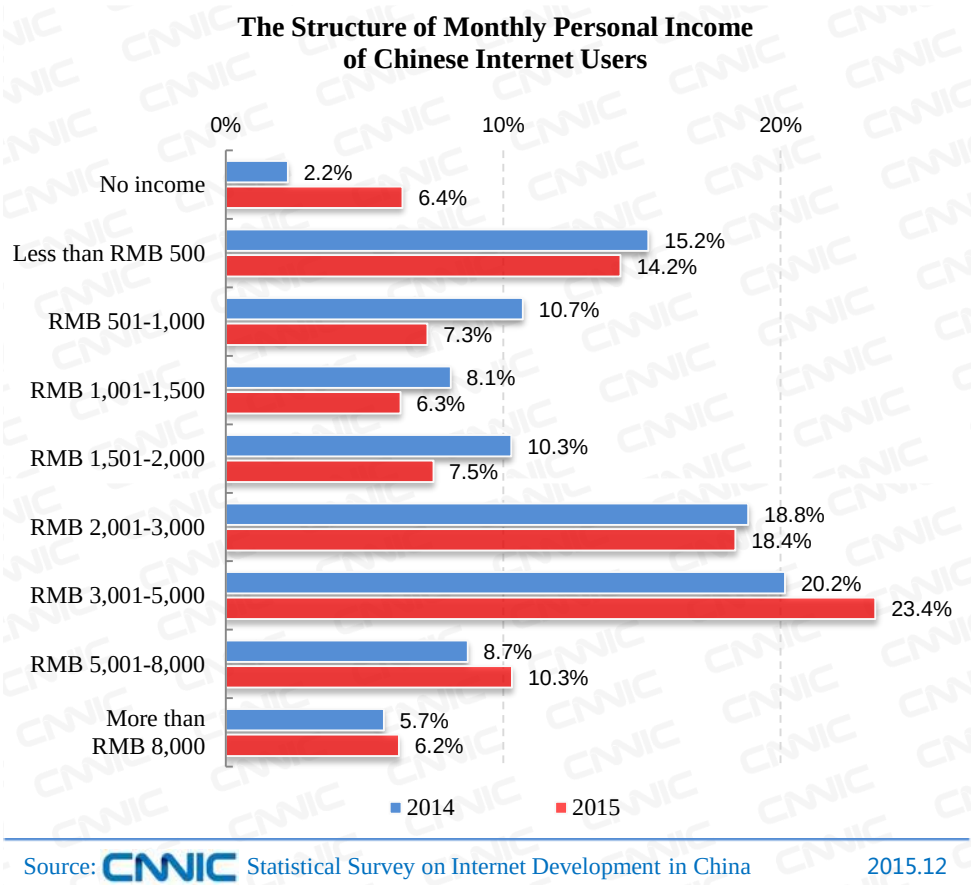


Figure 44 Structure of Monthly Personal Income of Chinese Internet Users

Chapter VII Internet Access Environment

i. Internet Access Devices

More and more netizens use the mobile phone to access the Internet, while the number of netizens using desktops, laptops and tablets is declining. By December 2015, 90.1% of Chinese netizens accessed the Internet on the mobile phone, up by 4.3 percentage points from the end of 2014, and 18.5% used exclusively the mobile phone for Internet access, 3.2 percentage points up from the end of 2014; 67.6% used desktops, 38.7% laptops and 31.5% tablets, all up by about 4 percentage points from the end of 2014. The TV set, an entertainment and Internet access device at home, was used by 17.9% of netizens, up by 2.3 percentage points from the end of 2014.

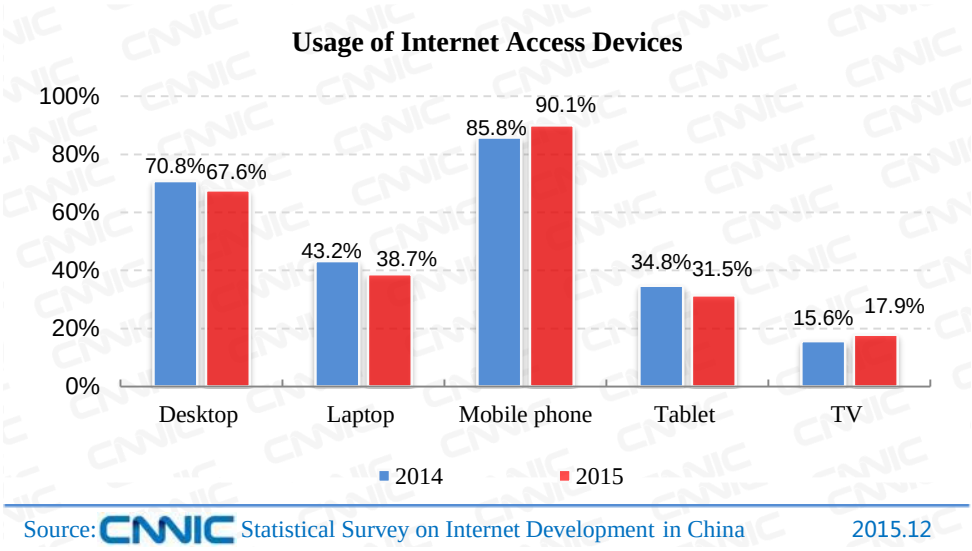


Figure 45 Usage of Internet Access Devices

ii. Venues of Internet Access

By December 2015, 90.3% of Chinese netizens accessed the Internet via computers at home, more or less the same level with the data at the end of 2014; the percentages of netizens who did so at the workplace, schools or public places all edged up while that of those who did so at Internet bars slipped to 17.5%.

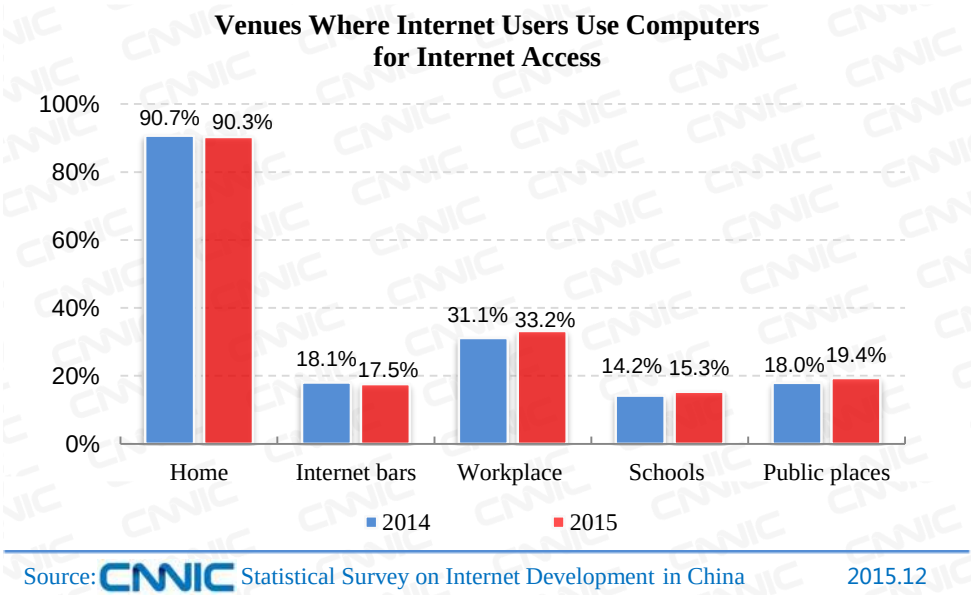


Figure 46 Venues Where Internet Users Use Computers for Internet Access

iii. Network Access

By December 2015, 88.8% of mobile Internet users in China accessed the Internet via the 3G/4G network, up by 3.1 percentage points from June 2015. In May 2015, the General Office of the State Council issued *Guiding Opinions on Accelerating the Construction of High-Speed Broadband Networks, Increasing the Network Speed and Reducing Access Charges*, making it clear to speed up infrastructure construction and significantly improve the network speed. In response, the three operators in China started to take actions to reduce the Internet charges and "not to clear the unused data of the current month". This will help improve the Internet access environment and the usage rate of 3G/4G network.

By December 2015, 91.8% of netizens had accessed the Wi-Fi network in the past half a year, up by 8.6 percentage points from June 2015. As the campaign for building “smart cities” and “wireless cities” is in full swing, the government is working with enterprises in deploying Wi-Fi networks in public places and on means of public transport in urban areas, and the Wi-Fi service is becoming increasingly popular in public places; wireless terminals such as the mobile phone, the tablet and the smart TV help promote the Wi-Fi network at home, which has also become the first choice for Internet access in fixed locations.

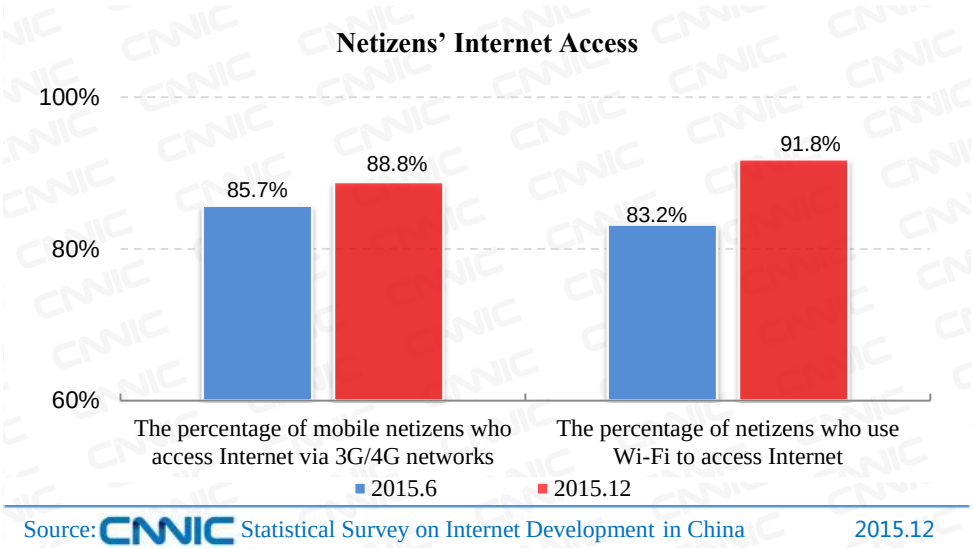


Figure 47 Netizens' Internet Access

iv. Online Duration

In 2015, the average online duration per netizen in China was 26.2 hours, basically the same with that in 2014.

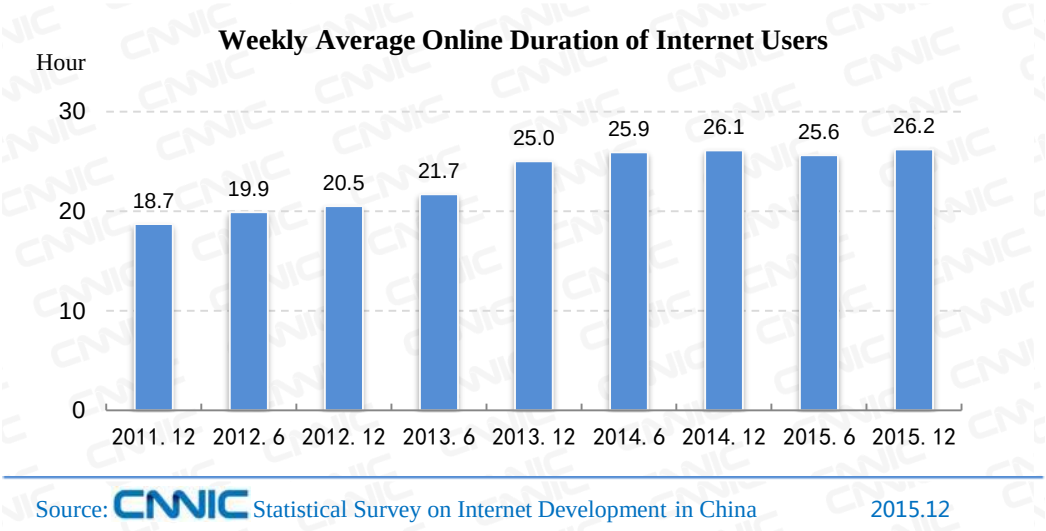


Figure 48 Weekly Average Online Duration of Internet Users

v. Cyber Security

In 2015, 42.7% of Internet users encountered problems with cyber security, down by 3.6 percentage points from the end of 2014. Among the security incidents, 24.2% were virus or Trojan horse attacks to computers or mobile phones and 22.9% were stolen accounts or passwords, both down from their respective occurrence rate at the end of 2014. Meanwhile, as the online shopper

population is growing, problems with online shopping security have increased dramatically. In 2015, 16.4% of online customers encountered fraud in their shopping experience, up by 3.8 percentage points from 2014.

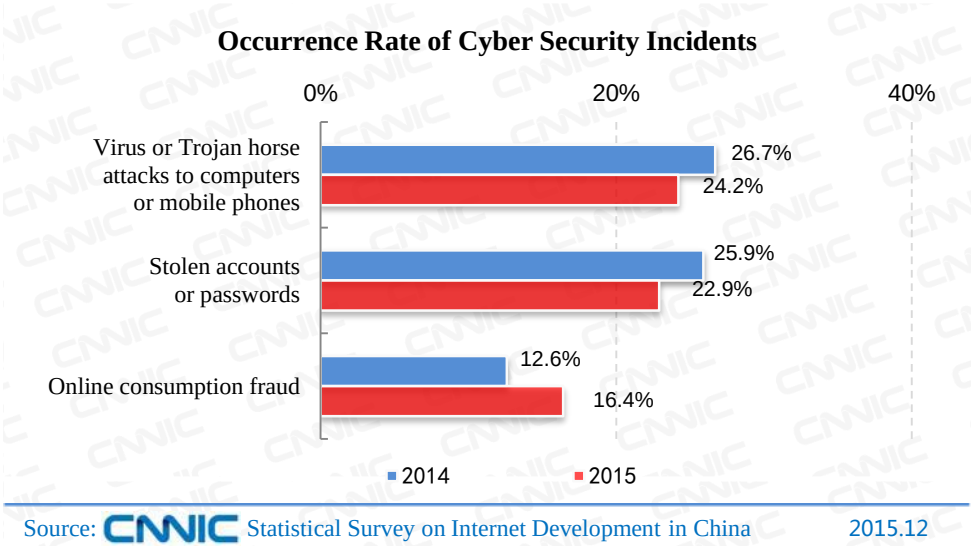


Figure 49 Occurrence Rate of Cyber Security Incidents

Chapter VIII The Development of Personal Internet Applications

The year of 2015 saw the rapid development of personal Internet applications. In addition to forum/BBS, users of other applications were also growing. In particular, online stock or fund trade became the hot sport for online investment, with the number of 54.3%users' growth; online payment scenarios were being enriched, attracting an increase of user base by 36.8%; at the mobile end, applications for commercial trade and e-finance were taking the lead and users for other applications also grew to varying extent.

The usage rate of basic applications had limited room for improvement but major breakthroughs were made in improving the user experience

Users of basic Internet applications such as those for instant messaging, search engine, network news and social networking have been growing steadily: the usage rate of instant messaging applications has almost been peaked, and such applications are more and more extending their basic functions and becoming a comprehensive platform for users to access all sorts of daily life services; search engine applications are speeding up to transform from information service to eco-platform service and the mobile search engine market continues to grow rapidly; the network news market is advancing towards the integration of "senior editor" + "intelligent algorithm" to realize precise, individualized recommendation; the social networking market is integrating with other sectors with the help of big data and mobile social networking technology.

Applications for commercial trade were growing steadily and companies were active in exploring the market and digging out new growth points

After years of rapid growth, commercial trade applications have entered into the phase of steady growth. The online shopping market continues to grow rapidly and cross-border e-commerce and rural e-commerce become new hotspots of the market; the group purchase industry continues to "de-group" and dig into the consumption potential under the O2O mode; large Internet companies are strategically investing in the online meal ordering market which actively lures

physical restaurants; the online travel reservation industry is growing rapidly as tourism consumption explodes.

E-entertainment applications grew steadily, boosted by fine content

The e-entertainment industrial chain, with intellectual property (IP) as its core, displayed tremendous commercial value in 2015. TV series adapted from popular works of Internet literature created high records of audience rating, and online games adapted from them also won the attention of their loyal fans immediately; in turn, the success of such adaptation facilitated the development of Internet literature itself which promoted the change of its readers to providing free reading to expand the readership and foster high-quality IP. Meanwhile, along with the development of live video broadcast, the live video broadcast of online music programs is shaping a new business mode, attracting more and more audience and creating new development opportunities for the music industry.

Online management wealth of a fixed term went popular and e-payment was expanding rapidly to more payment scenarios in physical stores

In 2015, the development of Internet finance applications went further: in the online wealth management market, the user base was growing, and the products were no longer limited to those with no fixed term after the introduction of products with a fixed term; e-payment was rapidly reaching offline payment scenarios in physical stores, active efforts were made to handle payment in foreign currencies, and the number of e-payers grew by 112 million from the end of 2014.

The medical and education service mode relied more and more on Internet which had effectively improved public services

In 2015, the Internet influenced people's lifestyle more deeply, and penetrated into public services such as education, medical services and transport. The survey finds that applications for public services such as online education, online medical services and online taxi/car hire has more than 100 million users in each category, showing that the customers' consumption habit is taking the shape.

Table 8 Usage Rate of Internet Applications by Chinese Internet Users 2014-2015

	2015		2014		
Application	The number of users (10,000)	The percentage of Internet users using the application	The number of users (10,000)	The percentage of Internet users using the application	Annual growth rate
Instant messaging	62,408	90.7%	58,776	90.6%	6.2%
Search engine	56,623	82.3%	52,223	80.5%	8.4%
Internetnews	56,440	82.0%	51,894	80.0%	8.8%
Online video	50,391	73.2%	43,298	66.7%	16.4%
Online music	50,137	72.8%	47,807	73.7%	4.9%
E-payment	41,618	60.5%	30,431	46.9%	36.8%
Online shopping	41,325	60.0%	36,142	55.7%	14.3%
Online games	39,148	56.9%	36,585	56.4%	7.0%
Online banking	33,639	48.9%	28,214	43.5%	19.2%
Internet literature	29,674	43.1%	29,385	45.3%	1.0%
Travel booking[11]	25,955	37.7%	22,173	34.2%	17.1%
E-mail	25,847	37.6%	25,178	38.8%	2.7%
Group buying	18,022	26.2%	17,267	26.6%	4.4%
Forum/bbs	11,901	17.3%	12,908	19.9%	-7.8%
Internet wealth management	9,026	13.1%	7,849	12.1%	15.0%
Online stock or fund trade	5,892	8.6%	3,819	5.9%	54.3%
Social networking[12]	53,001	77.0%	-	-	-
Online education	11,014	16.0%	-	-	-
Online medical services	15,211	22.1%			

[11]Travel booking: It is defined in this report as booking air tickets, hotel, train tickets and travel & vacation products via Internet in the last 6 months.
[12]Social networking applications here refer only to social networking websites, Weibo and all sorts of vertical social networking applications. Instant messaging applications have quite a large user base and are thus treated as a typical application for a separate category, independent from social networking applications.

Table 9 Usage Rate of Mobile Internet Applications by Chinese Internet Users2014-2015

	2015		2014		
Application	The number of users (10,000)	The percentage of Internet users using the application	The number of users (10,000)	The percentage of Internet users using the application	Annual growth rate
Mobile instant messaging	55,719	89.9%	50,762	91.2%	9.8%
Mobile netnews	48,165	77.7%	41,539	74.6%	16.0%
Mobile search	47,784	77.1%	42,914	77.1%	11.3%
Mobile music	41,640	67.2%	36,642	65.8%	13.6%
Mobile video	40,508	65.4%	31,280	56.2%	29.5%
Mobile payment	35,771	57.7%	21,739	39.0%	64.5%
Mobile commerce	33,967	54.8%	23,609	42.4%	43.9%
Mobile game	27,928	45.1%	24,823	44.6%	12.5%
Mobile banking	27,675	44.6%	19,813	35.6%	39.7%
Mobile Internet literature	25,908	41.8%	22,626	40.6%	14.5%
Mobile travel booking	20,990	33.9%	13,422	24.1%	56.4%
Mobile mail	16,671	26.9%	14,040	25.2%	18.7%
Mobile group buying	15,802	25.5%	11,872	21.3%	33.1%
Mobile forum /bbs	8,604	13.9%	7,571	13.6%	13.7%
Mobile stock or fund trade	4,293	6.9%	1,947	3.5%	120.5%
Mobile online educational courses	5,303	8.6%	-	-	-

i. The Development of Basic Applications

1.1 Instant messaging

As of December 2015 the user base of instant messaging was 624 million, accounting for 90.7% of the total netizen population and representing a yearly increment of 36.32 million. In particular, users of mobile instant messaging reached 557 million, constituting 89.9% of mobile netizens and recording a yearly increase of 49.57 million.

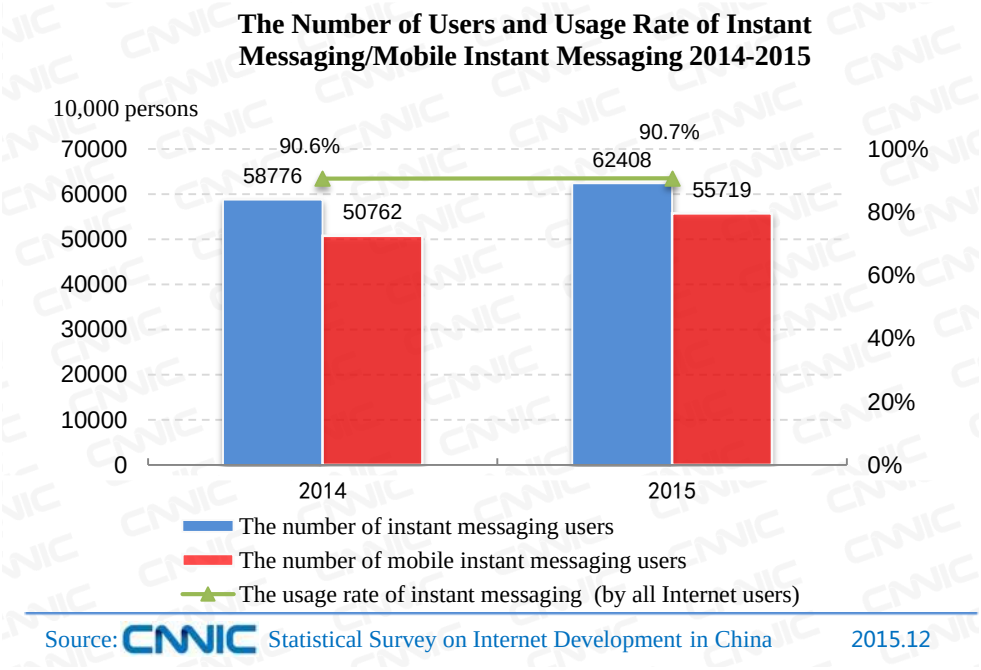


Figure 50 The Number of Users and Usage Rate of Instant Messaging/Mobile Instant Messaging 2014-2015

Instant messaging applications remain the most used applications and their user base is still growing. But different development directions laid down based on the market share vary distinctly. For mainstream instant messaging applications, since the usage rate has almost peaked, their development direction is shifting from meeting the basic communication needs of users to exploring new business services, in order to add magnetism-based value. For other instant messaging applications, their development priority is still to dig out the needs of vertical users and thus expand the user base.

Their advertising revenue increased remarkably in 2015. On one hand, instant messaging software on PCs is more closely connected to e-commerce websites which can better find out the potential consumption needs of the users from the users' profiles on the instant messaging software and receive more traffic from such software. On the other, the advertising mode on instant messaging applications is widely recognized. The advertising business on WeChat's "Moments" made considerable contribution to the total advertising revenue in just one year after its launch. Public accounts have gradually become a must-have for companies to promote their products and services.

What's more, instant messaging applications are more and more extending their basic functions and becoming a comprehensive platform connecting all sorts of daily life services while

enhancing the magnetism to users. Besides providing basic information communication service to users, instant messaging companies are exploring the mobile payment market and trying to use mobile payment to connect users' shopping, travel and entertainment demands and public services such as medical services, government administrative services and payment of public utilities. In the future, instant messaging applications will, as the most fundamental type of applications in people's daily life, highlight their value as information communication tools in more scenarios.

1.2 Search engine

By December 2015 China had 566 million search engine users, representing an annual increase of 44 million or 8.4%, with a utilization ratio of 82.3%; it also had 478 million mobile search users, a yearly increment of 48.70 million or 11.3%, with a utilization ratio of 77.1%. Search engine applications are the second most used type of basic applications, with instant messaging ranking the first; mobile search applications are the third most used applications among all mobile applications, after mobile instant messaging and mobile network news applications.

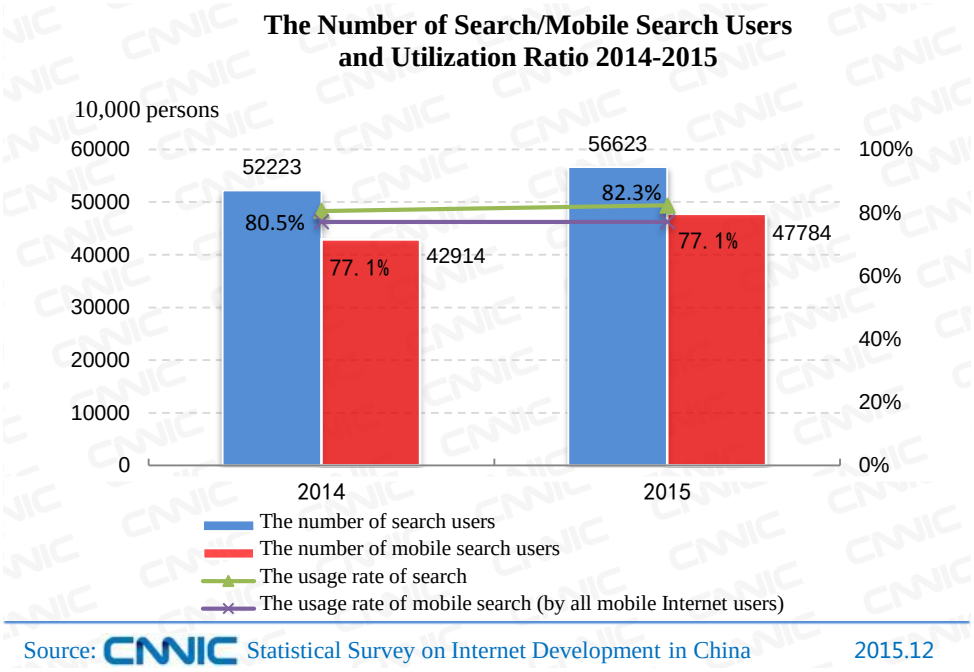


Figure 51 The Number of Search/Mobile Search Users and Utilization Ratio 2014-2015

In 2015, the mobile search market maintained the momentum of robust growth. First, the number of mobile search users still outgrew the number of search engine users. Second, the mobile search traffic fully exceeded the traffic on the PC end. The Q3 financial report of 2015 showed that

two thirds of search traffic on Baidu came from the mobile end and the mobile search traffic on Sogou also surpassed the traffic from the PC end. Third, mobile revenue was taking up an increasing share in overall revenue. The financial report revealed that Baidu's mobile revenue increased from 50% in Q1 to 54% in Q3 while Sogou's from 22% in Q1 to 30% in Q3.

Search engine applications continued the shift of their focus from information service to eco-platform construction. By employing advanced technologies such as speech recognition, image recognition, artificial intelligence, and machine learning, search platforms incorporated search services such as navigation, shopping, local services, news and social networking, deeply dug into the big data about users' behaviors, improved the search products and the user's experience, provided better services for netizens and companies and thus made progress and breakthrough in the traffic, revenue and e-commerce trade volume, etc.

Big data and intelligent technology together advanced the search technology to respond to the fast growing amount and complexity of Internet data. On one hand, based on website cooperation plans and open search platforms, a mass of high-quality contents in the deep web and dark web[13] is being reached by search engines, improving the search result in a subtle way; on the other, as more and more physical transactions move online, and the Internet of Thing and the Internet become more integrated with each other, search scenarios become highly fragmented, the information structure complicated and users' search demands more diversified. They search not only Internet contents, services and geographical locations, but also Internet access devices, which pose a greater challenger for the intelligent algorithm of the future search engine model and the display of search results.

1.3 Netnews

As of December 2015 China had 564 million of Netnews readers, a yearly increase of 45.46 million or 8.8%. Netnews utilization ratio by Internet users was 82.0%, up by 2 percentage points over the end of 2014. In particular, the user base of mobile Netnews was 482 million, up by 66.26 million or 16.0% over the end of 2014, and the utilization ratio was 77.7%, up 3.1 percentage points over the end of 2014.

[13]The deep web and the dark web refer to contents on the Internet that cannot be found by traditional search engines.

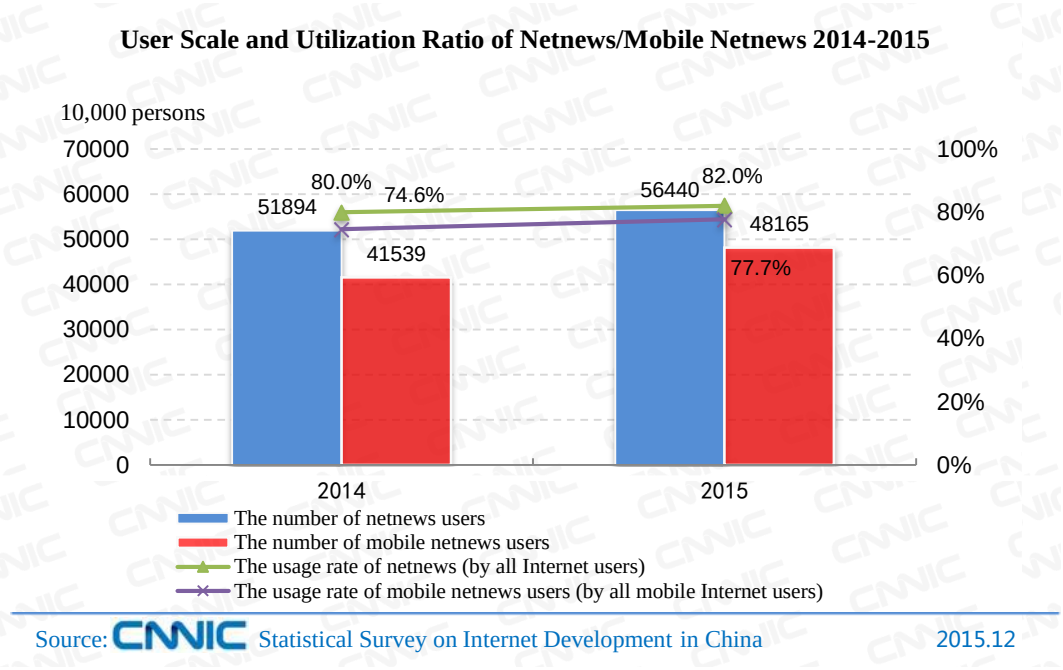


Figure 52 User Scale and Utilization Ratio of Netnews/Mobile Netnews 2014-2015

As a basic type of information applications, Netnews apps have become the third biggest kind of Internet applications after instant messaging and search engine applications. Their user base is close to the total netizen population, which means that the cost for converting potential users will be rising. The netnews market will also follow the rule of "the big gets bigger" to shape the market structure. Some brands with first-mover advantages has established a considerable user base in the past couple of years, and thus are more likely to become industry leaders, including some time-honored and influential portal news brands and some emerging news brands which were born and thriving in the mobile Internet era with their technological or hardware strength. It's difficult for new entrants to become the "entry platform" in this market, and they will have bigger chance in vertical domains.

As the era of mobile Internet approaches, traditional press and portal websites are quickening their pace of transformation, We Media entities are springing up, robot and algorithmic technology are upgrading, and the production and spread of contents are undergoing profound changes. In the future, netnews products will speed up iteration to meet the diversified needs of users against the background of information explosion. In the mobile and fragmented age of mobile Internet, netnews will remain basically short, adaptable and fast. As the market matures, the intensive competition for users and the pressure to retain users will force netnews organizations to more value the content quality and personalized accurate recommendation. The netnews market will advance

towards the integration of "senior editor" + "intelligent algorithm", retain users with fine contents, and make personalized targeted recommendations with the help of intelligent technology, making it possible to meet the diversified individual demands for news.

1.4 Social networking

Along with the advancement of mobile Internet, social networking applications[14] have entered into a new phase, to meet users' diverse needs for communication, sharing, service and entertainment with their functions such as LBS, Interest and Contacts. Based on CNNIC's analysis of the current social networking application market, China's social networking applications can be divided into the following two types: comprehensive ones that gather information, such as QQ Zone, Weibo, etc.; and comparatively specialized, niche vertical ones, such as photo/video-based social networking applications, community-based ones, blind-date applications, anonymous social networking applications, and workplace social networking applications, etc.

In the comprehensive social networking domain, typical applications are QQ Zone and Weibo, used by 65.1% and 33.5% of Internet users respectively. Specifically, QQ Zone is designed to meet users' demands for managing the information about personal relationship chain.It has been innovating in its product forms and business marketing, and also has made useful and fruitful attempts in relationship marketing based on big data. In comparison, Weibo is aimed to satisfy users' demands for information they are interested in, and serves as an important platform for users to obtain and share information such as "Hot News", "Interest", "Expert Knowledge" and "Public Opinion". Meanwhile, Weibo is playing a positive role in helping users expand their social network based on common interest. In the past year, the Weibo team has been implementing the decentralization strategy, fostering the We Media force in vertical domains, and stimulating the creation of original contents, so as to attract and retain active users with fine contents. Thanks to these efforts, the user base is growing steadily and the value of content platform is increased.

For vertical social networking applications, applications in different domains display different characteristics in the nature and behaviors of users, business mode, information category, and usage

[14]Social networking applications here refer only to social networking websites, Weibo and all sorts of vertical social networking applications. Instant messaging applications have quite a large user base and are thus treated as a separate category, independent from social networking applications.

scenario. The domestic use of social networking applications is still far from enough and vertical social networking applications will be further developed.

In the age of mobile Internet, based on the big data and mobile social networking technology, social networking applications are more and more mobilized, localized, and become a perfect entry for diverted business traffic. So far, the social networking function has been introduced to domains of e-commerce, game, video and even online education and Internet finance, to expand the user base and increase the magnetism to users. Thus social networking applications have a promising future in China.

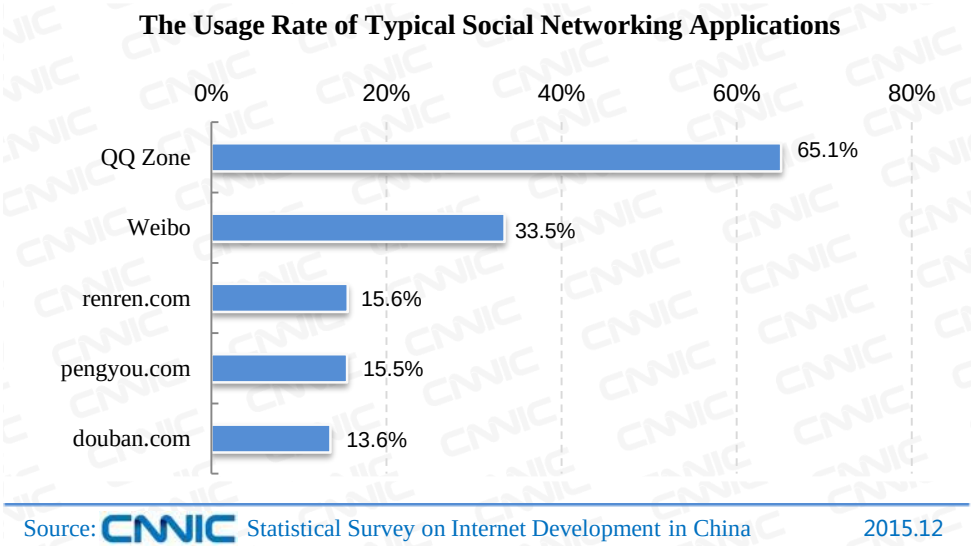


Figure 53 The Usage Rate of Typical Social Networking Applications

ii. The Development of Business Transaction Related Applications

2.1 Online shopping

By December 2015, China had 413 million online shopping customers, a yearly increase of 51.83 million or 14.3%. The Chinese online shopping market still maintains robust growth. Meanwhile, the number of mobile online commerce (or m-commerce) customers is growing rapidly to 340 million, an increase of 43.9%. The usage rate of m-commerce is increased from 42.4% to 54.8%.

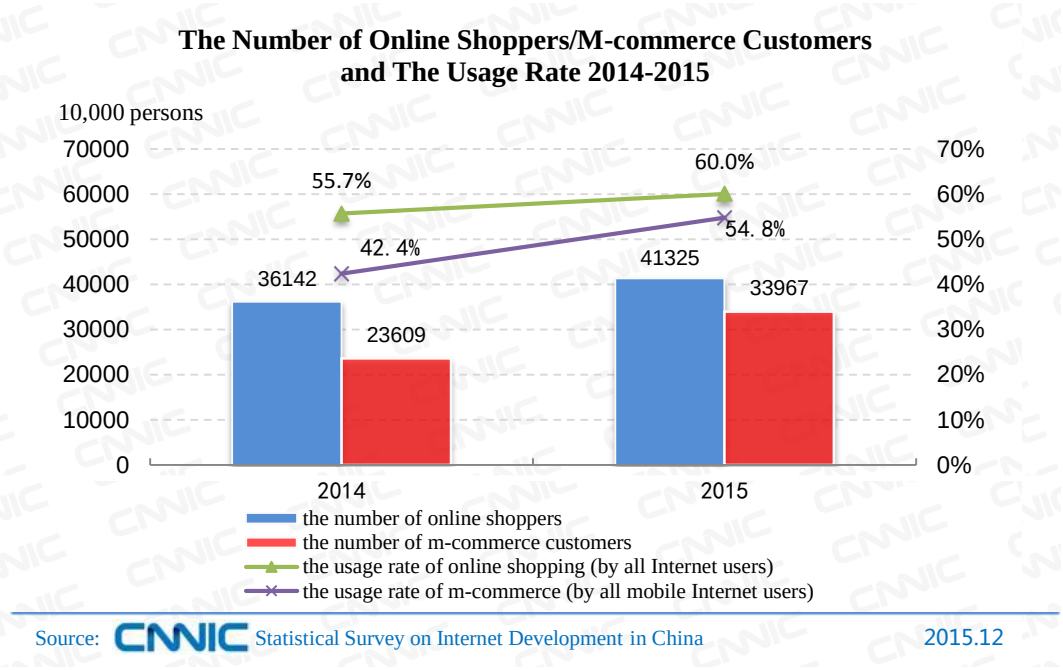


Figure 54 The Number of Online Shoppers/M-commerce Customers and the Usage Rate 2014-2015

In 2015, the government rolled out several policies to promote the rapid development of the e-tail market. The “Internet+Circulation” Action Plan and Guiding Opinions on Actively Promoting "Internet+” Actions make it clear to promote e-commerce in rural areas, in small- and medium-sized cities and in communities, the integration and interaction between online and physical businesses, and upgrade the cross-border e-commerce industry; and advance 11 priority programs including collaborative manufacturing, modernized agriculture and smart energy. The above policies are helpful for constructing the big consumption structure under the e-commerce mode. The Suggestions of the CPC Central Committee on Developing the 13th Five-Year Plan for National Economic and Social Development make “sharing” one of the keywords for development. The e-tail business, a “platform economy” echoes the theme of sharing, and allows businesses and consumers to benefit from the building of corporate platforms.

With policy support, cross-border e-commerce becomes a new growth point for the e-tail market, accumulating global influence. The data provided by the Ministry of Commerce shows that, the growth rate of cross-border e-commerce trade volume is about 40% on average, about 60% for e-tail imports while about 40% for e-tail exports. Chinese e-tail platforms have introduced over 5,000 famous brands from over 25 countries and regions including the Untied States, European countries, Japan and the Republic of Korea, covering all import categories and exported over 50

million discount goods made by over 5,000 producers to 64 countries and regions including those in the "Belt and Road" region. Meanwhile, e-tail companies are digging deep into the rural consumption potential, with rural customers taking up 22.4% of online shoppers. Alibaba, JD.com and Suning have built their service stations in rural areas and recruited promoters to serve rural consumers.

2.2 Group buying

By December 2015, Chinese group buying websites had 180 million users, a yearly increase of 7.55 million, or 4.4%, accounting for 26.2% of the total Internet users in China. Specifically, the group buying business for m-commerce continued to grow rapidly, with the user base reaching 158 million, an increase of 33.1%, accounting for 25.5% of the mobile Internet users, up from 21.3% in 2014.

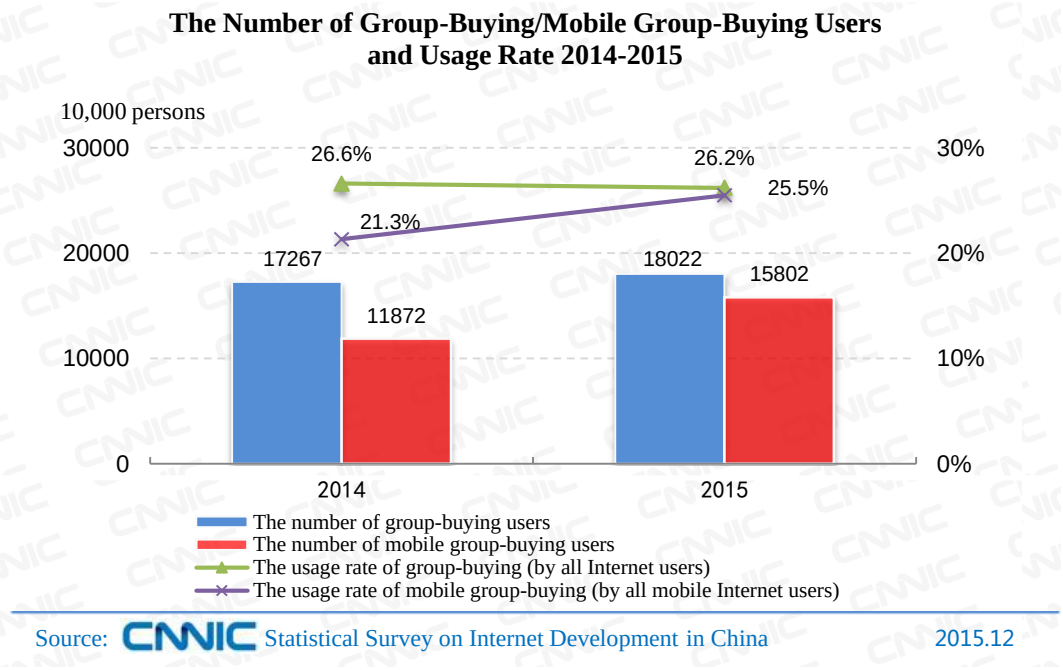


Figure 55 The Number of Group-Buying/Mobile Group-Buying Users and the Usage Rate 2014-2015

In 2015, the group buying industry continued to dig deep into the O2O mode, with less and less emphasis on group buying services. As a typical type of O2O applications, group buying websites are marching further into the O2O market with the strategic investment of Internet giants such as Tencent and Baidu. Following its investment in dianping.com in 2014, Tencent became a shareholder of the company born out of the merger of meituan.com and dianping.com in

2015. In 2014, Baidu took full control of nuomi.com and in 2015 promised to spend RMB 20 billion on it in the following three years. With capital support, on one hand, big and comprehensive group purchasing platforms tend to make "intensive farming" in vertical domains. For instance, to make breakthrough, meituan.com has carried out the T-shaped strategy and explored comparatively mature business under the O2O mode, such as movie tickets, take-away and hotel booking services. With the data accumulated over the years, dianping.com has managed to attract and retain high-end users, and boosted the low-frequency business with high-frequency business while exploring the O2O business, and is the first to open up new fields in beauty, wedding, home decoration and payment-upon-consumption services. On the other, group buying websites have launched the membership scheme to enhance the user experience，addressing problem of low magnetism of users. For example, with the brand endorsement, product support and investment from Baidu, nuomi.com has been focused on building a "member+" ecological system in the O2O business and launched services centering on pre-paid cards, payment-upon-consumption and VIP membership. However, the O2O mode is not a "lifesaver" for the group buying industry, for O2O services have long been a money burner, with no clear forecast of earnings. High-frequency O2O services such as restaurant booking, movie tickets and take-away are more mature, while low-frequency door-to-door services such as housekeeping, beauty, nail polish and hair care have their market potentials overestimated.

2.3 Online take-away ordering

By December 2015, the user scale of online takeaway ordering reached 114 million, accounting for 16.5% of total Internet users, including 104 million who use it on the mobile phone, accounting for 16.8% of total mobile Internet users. After establishing the platform mode with short-distance logistics as the core value in 2015, the online ordering business grew rapidly and in the second half of the year formed a comparatively clear industry structure in the O2O integration wave. The market is highly concentrated, but still needs to address many problems despite its rapid growth.

In 2015, the takeaway delivery mode was shifted from the delivery by individual restaurants to the eco-industry cluster mode featuring one specialized delivery service platform taking orders

from multiple restaurants, stimulating the rapid growth of the business. Since the second half of 2015, O2O services have begun to integrate with each other, driven by the capital force and with the investment of Internet giants, the once chaotic online ordering market is presenting a clearer picture. After the merger of meituan.com and dianping.com, Tencent increased its investment in meituan.com to increase the latter's influence; Alibaba invested in ele.me as a supplement to its O2O business with koubei as the core. The above two companies together withBaidu grab 83.4% of users of online ordering services, dominating the online ordering market.

But as online ordering platforms expand in scale, the qualifications of restaurants registered on them and the staff management and road safety for their delivery team, both long-time bottlenecks to their development, have started to arouse social concerns. Meanwhile, the intensifying market competition makes it difficult for these platforms to earn more and establish their competitive edge from the delivery service alone, and the subsidized promotion strategy is not sustainable in the long run. Therefore, online ordering platforms need to seriously consider how to better control restaurant qualifications, better manage the delivery team, dig out users' specific demands and provide high-added-value services.

2.4 Travel booking

As of December 2015, the number of netizens with the experience of booking air tickets, hotel rooms, train tickets or vacation tourism products on the Internet reached 260 million, an increase of 37.82 million or 17.1% over the end of 2014. The Internet users who had ever booked train tickets, air tickets, hotels and holiday travels online accounted for 28.6%, 14.5%, 14.7% and 7.7% respectively. As of December 2015, the number of netizens with the experience of booking air tickets, hotel rooms, train tickets or holiday travels on the mobile Internet reached 210 million, an increase of 75.69 million or 56.4% over the end of 2014. Chinese netizens' utilization ratio of mobile travel booking increased from 24.1% to 33.9%.

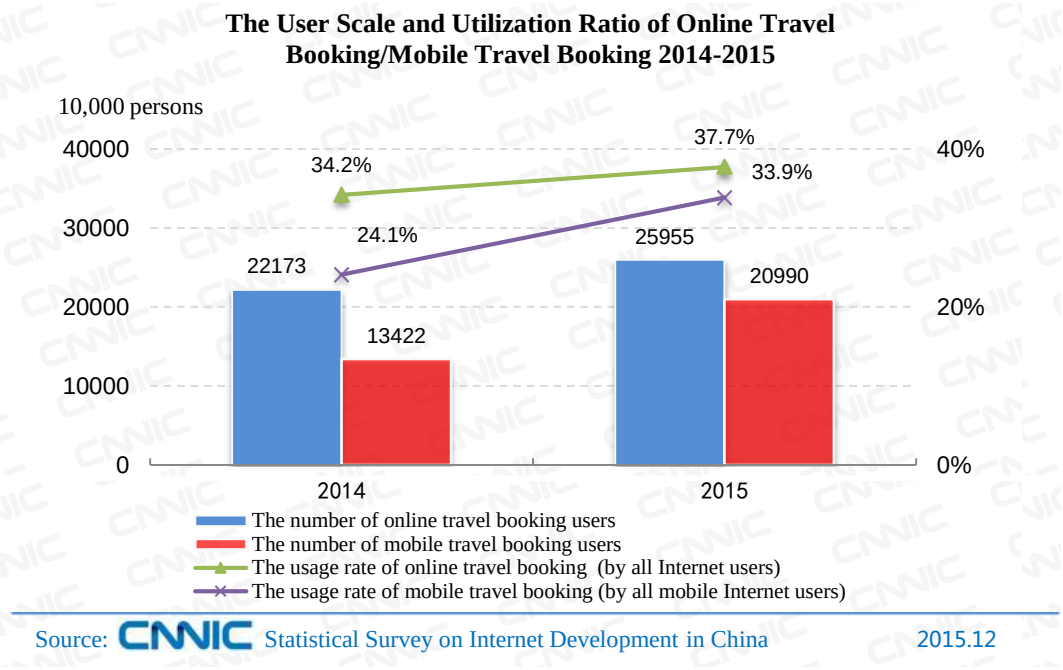


Figure 56 The User Scale and Utilization Ratio of Online Travel Booking/Mobile Travel Booking 2014-2015

The domestic demand for tourism continues to grow. The data provided by China National Tourism Administration shows that in 2015, China ranked the world's first in terms of the number of domestic tourists, that of outbound tourists, domestic tourism consumption and outbound tourism consumption. The outbound tourism market has kept prosper. More and more countries, including Australia, Singapore, the United States and Canada, have simplified their visa policy for Chinese visitors, encouraging more Chinese to travel and spend in these countries and thus accelerating the development of Chinese tourism industry. The tourism industry is gaining prominence in improving people's livelihood, easing the mental pressure of urban residents, and boosting domestic demand and consumption.

The growing demand for tourism helps boost the development of the online travel booking industry. Online travel booking companies pay equal attention to low-end and high-end markets, using the profits earned from the high-end market to cover the cost for competing in the low-end market. As far as the corporate development trend is concerned, direct sales will become the mainstream mode for air ticket booking. On one hand, direct sales of air companies are gaining momentum year after year, so they intend to grasp more profits from direct ticket sales; on the other, some air ticket agents are not complying to norms or under adequate supervision and air companies need to regulate the agents' behaviors in order to reduce complaints from passengers. As the

commission is shrinking to even zero, the competition between air companies and online travel booking companies (air ticket agents) is intensifying.

iii. The Development of Internet Finance Applications

3.1 Internet wealth management

In 2015, the Internet wealth management market went further with dramatic changes to its product structure. The products were no longer limited to those with no fixed term[15]after the introduction of products with a fixed term[16]. As of December 2015, Internet wealth management products had been purchased by 90.26 million netizens, an increase of 11.77 million over the end of 2014; and the usage ratio was 13.1%, up by 1.0 percentage point.

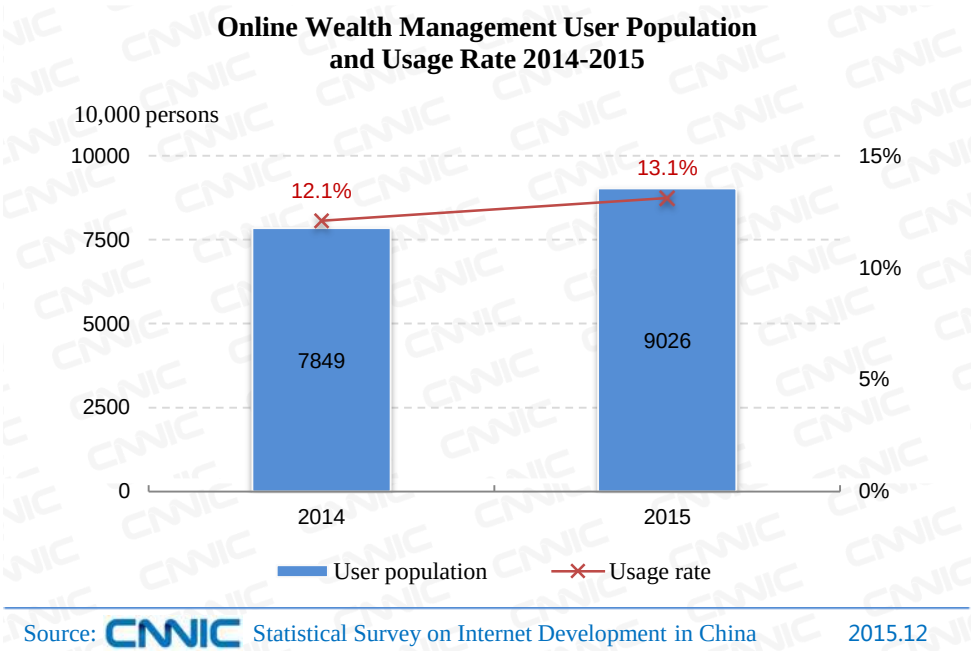


Figure 57 Online Wealth Management User Population and the Usage Rate 2014-2015

In an economy where the central bank has repeatedly lowered the required reserve rate and the interest rate and the monetary supply has been increasing, Internet wealth management products without a fixed term such as currency funds see their interest rate declining simultaneously with the bank deposit interest rate. The mainstream yield rate for such products is

[15]Online wealth management products with no fixed term refer to products that are issued by Internet companies or banks, and can only be purchased on the Internet, such as Yu'ebao. Such products are characterized by high yields, low entry level and high liquidity.
[16]Online wealth management products with a fixed term refer to products that are purchased on the Internet and expire after a fixed period, excluding wealth management products and close-end funds sold on banks' websites.

below 3%. They are no longer regarded as high-yield wealth management products, but cash management tools that can generate interest. The survey finds that by December 2015, Internet wealth management products without a fixed term had a client base of 85.94 million, upward from the end of 2014.

Internet wealth management products with a fixed term went popular in 2015, by the end of which our survey showed that they had 17.89 million users. Reasons for the rapid growth of users of Internet wealth management products with a fixed term are listed as below.

From the perspective of users: firstly, the shrinking yield of Internet wealth management products without a fixed term drives users towards more profitable products with a fixed term; secondly, the stock market volatility in 2015 also has turned people's eyes towards fixed-term wealth management products that can generate more stable yields; thirdly, thanks to the sound development of the market in the early stage, users have fostered much confidence in Internet wealth management products, paving the way for the development of fixed-term Internet wealth management products.

As to the perspective of products, firstly, financial institutions have launched more fixed-term wealth management products with low entry level in light of the characteristics of Internet wealth management; secondly, Internet companies use technical means such as big data and cloud computing to design products, lowering the entry level but increasing the liquidity of fixed-term wealth management products, thus making them more appealing to customers; thirdly, the sales platform offers several wealth management resources such as funds, insurance, bills and loans, etc. for customers to choose from.

3.2 E-payment

By December 2015 China had 416 million e-payment users, an annual increment of 112 million or 36.8%. The utilization ratio of online payment increased from 46.9% to 60.5% from December 2014. What's noteworthy is that the growth of mobile payment was in particular stunning in 2015, reaching 64.5%, covering 358 million users; the usage rate of mobile payment also increased from 39.0% to 57.7%.

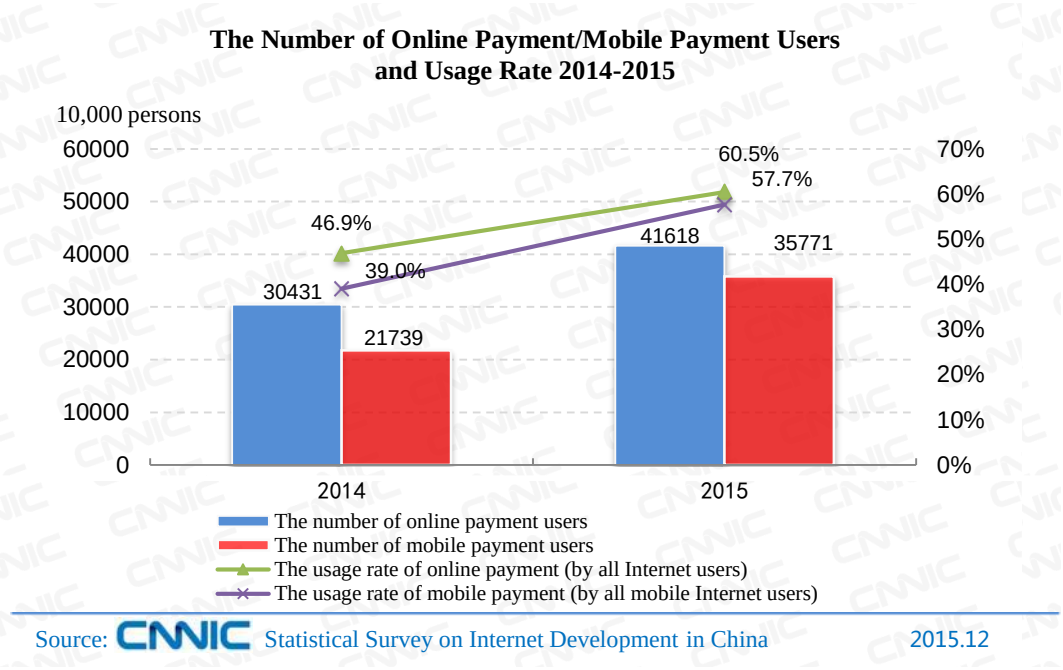


Figure 58 The Number of Online Payment/Mobile Payment Users and the Usage Rate 2014-2015

The year of 2015 saw rapid development and accelerating popularization of e-payment. Firstly, e-payment companies vigorously expanded online and offline channels and diversified payment occasions to give play to the role of "electronic wallet". On one hand, e-payment companies subsidized both businesses and consumers to encourage more physical businesses to launch the mobile payment service. On the other, e-payment companies supported payment in foreign currencies to expand the overseas payment market. Secondly, e-payment and consumer credit information together formed the credit consumption system. In early 2015, eight credit companies including Zhima Credit, Tencent Credit and Lakala Credit obtained the consumer credit business license from the central bank. Under the credit system that is under construction, bad credit behaviors will be recorded and the consumption of the person in question will be restricted via e-payment, forcing consumers to keep good personal credit and thus regulating and improving the e-payment environment for online credit consumption.

But e-payment also has risks and third-party payment tools tend to be exploited for cash-out. With the e-payment system, consumers or businesses can make payment via WeChat or Alipay or a credit card on line without the need of a POS device, making payment easier and harder to be noticed. As online business forms diversify, it's getting more and more difficult to oversee the cash-out of credit cards online.

iv. The Development of Online Entertainment Applications

4.1 Online games

As of December 2015, the user scale of online games was 391 million, accounting for 56.9% of the total netizen scale and representing a yearly increment of 25.62 million. In particular, users of mobile games reached 279 million, constituting 45.1% of mobile netizens and recording a yearly increase of 31.05 million.

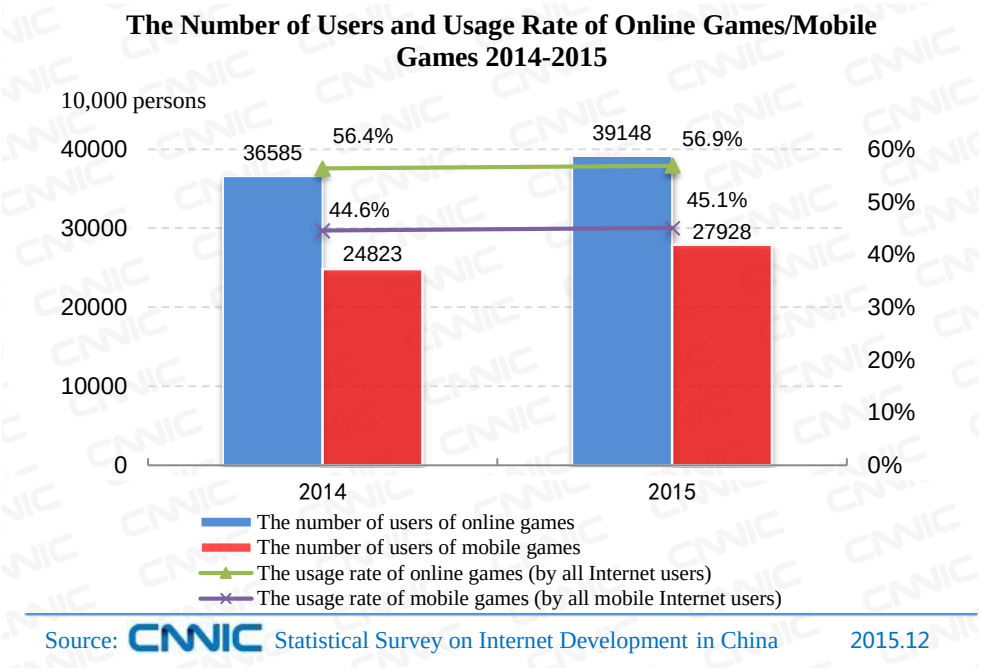


Figure 59 The Number of Users and the Usage Rate of Online Games/Mobile Games 2014-2015

As far as business development is concerned, the Chinese mobile game industry was maturing in 2015 after the explosion of users since 2013, which represented in the features: users' affordability was greatly enhanced, the categorization of games was recognized by the market, and the better software and hardware helped enhance the user experience. What's noteworthy is that strategy, shooting and even dress-up games specially targeting at female players were among the best sellers, somehow improving the problem of homogeneity in the game market. The change put an end to the monotonous and fixed way of evaluating games, creating more space for game developers and to certain extent weakening the say of mobile game distributors on the industrial chain.

In 2015, not many games launched in China succeeded in winning a large user base, and most

of the existing users still clung to competitive games that were three or four years old, further establishing the dominance of such games at the client side and driving other industries centering on them to prosperity. With the revenue from and awards of competitive games contests reaching a new high, businesses associated with star players, game hosts and contests are maturing. In particular, game streaming is favored by investors. In 2015, several young game streaming platforms successfully attracted investment, but their profit model is not mature yet, and they still have a long way to go.

In addition, at the downstream of the Intellectual Property(IP) industrial chain, many online games and mobile games adapted from Internet literature, films and TV series won a lot of loyal users in short time. It's become common to promote games by attracting fans to pay for the games with IP contents. In turn, the practice has intensified the competition for high-quality IP contents, resulting in a competition of financial strength among game developers. As a result, small- and medium-sized game developers, with a smaller pocket, have to give up the high-priced IP contents and turn to develop their original IP, thus bringing something new into the game market.

4.2 Internet literature

As of December 2015 the user scale of Internet literature was 297 million, accounting for 43.1% of the total netizen scale and representing a yearly increment of 2.89 million. In particular, users of mobile Internet literature reached 259 million, constituting 41.8% of mobile netizens and recording a yearly increase of 32.83 million.

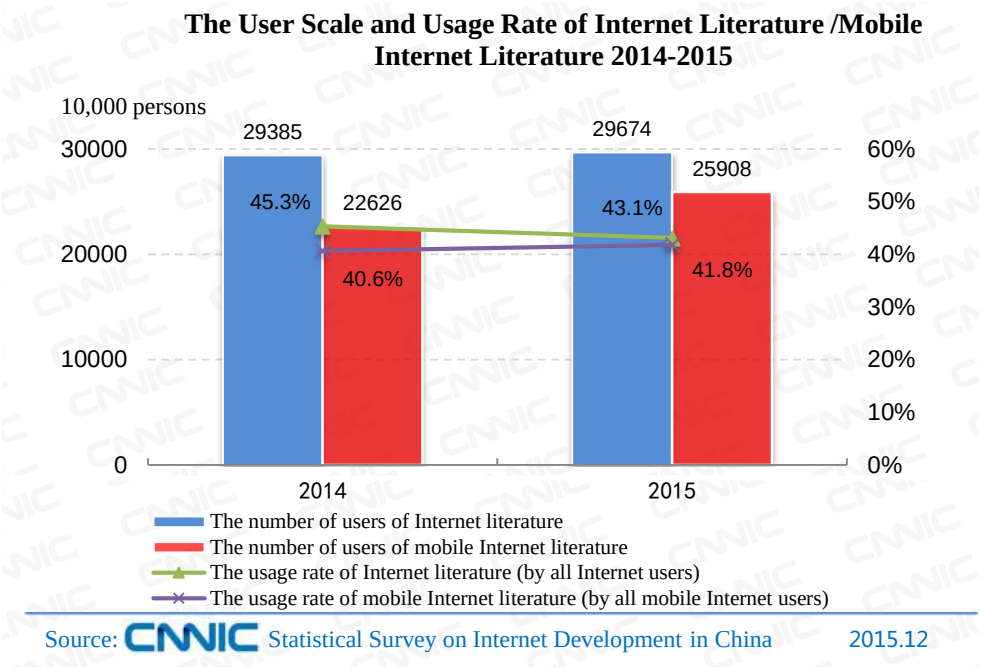


Figure 60 The User Scale and the Usage Rate of Internet Literature /Mobile Internet Literature 2014-2015

Because of the success of films and TV series adapted from Internet literature in 2015, high-quality IP of Internet literature is viewed by Internet giants as a strategic priority in the content field due to its huge potential commercial values, which in turn facilitates the integration of the Internet literature business. Literary websites have started to abandon the profit model simply relying on readers' payment; instead, they are establishing a new profit model that is based on nurturing popular high-quality IP, and the sales of copyright for screen and game adaptation.

At the upstream of IP production, Internet literature has received much attention from Internet giants in the past year, with Baidu, Tencent and Alibaba rushing to establish their own department dedicated to Internet literature. Qidian.com, zongheng.com and shuqi.com and other old literary websites are merged into the newly established e-entertainment divisions of these Internet giants. Internet literature groups, born out of such integration, actively make use of their resource advantage and seek for cooperation with film making and game companies, significantly diversifying the forms and enhancing the efficiency of secondary development of high-quality IP contents. As the revenue of the film and game industry continued to soar in 2015, the commercial value of fine Internet literature will be further demonstrated in the future.

4.3 Online videos

As of December 2015, China's online video user scale and utilization ratio were respectively 504 million and 73.2%, up 70.93 million and 6.5 percentage points over the end of 2014. Among all online video users, mobile video users were 405 million, a yearly increase of 92.28 million or 29.5%. The utilization ratio of mobile video was 65.4%, up by 9.2 percentage points over the end of 2014.

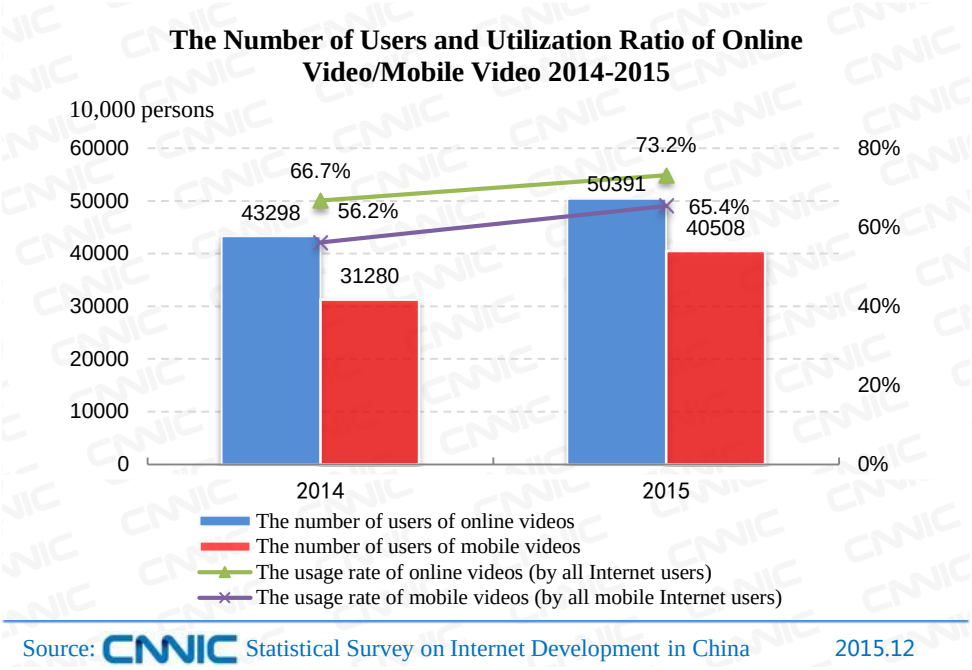


Figure 61 The Number of Users and the Utilization Ratio of Online Video/Mobile Video 2014-2015

In 2015, the online video industry was still trapped by its reliance on capital and traffic. The Matthew Effect was highlighted. iQIYI.com, youkutudou and v.qq.com established their dominance of the industry, leaving other video websites further behind. On the whole, the online video industry was characterized by two features in 2015:

Firstly, the revenue from paid services increased considerably, making the revenue structure healthier. The paid service market has entered the stage of qualitative change from that of quantitative change, driven by the growing online video viewer base, the reinforced efforts to crack down on piracy and hot linking, the popularization of e-payment in particular mobile payment, and the enhancement of IP awareness. The new paid subscribers of main video websites in 2015 outnumbered the total they had before. The revenue from paid services took up a bigger share of

the overall revenue and was expected to become an important source of revenue in the future.

Secondly, major video websites rushed to intensify their efforts to build an ecological system for the video industry. As to hardware equipment, they were engaged in the manufacturing of video playing hardware such as mobile phones, TV sets and boxes and the development of virtual reality (VR) devices to grab the hardware market. As to the marketing mode, they tried the mode of "video-based e-commerce" to allow viewers to make purchase while watching the videos, launched the e-commerce business to create a one-stop shopping experience for subscribers, and dug into the e-commerce value and derivative value of video contents. As to the industrial structure, they established film making companies to march into the film making industry and reach the content production link at the upstream on one hand, and on the other, reinforced the development of web series, used fine contents to deeply connect with literature, games, and cartoons business on the pan-entertainment industrial chain, translated fine contents into revenue, and promoted them on major cultural & entertainment platforms to maximize the value of contents.

4.4 Online music

By December 2015, the number of online music listeners reached 501 million, a yearly increase of 23.3 million, accounting for 72.8% of all Internet users. In particular, the number of mobile music listeners reached 416 million, an increase of 49.97 million from the end of 2014, accounting for 67.2% of mobile Internet users.

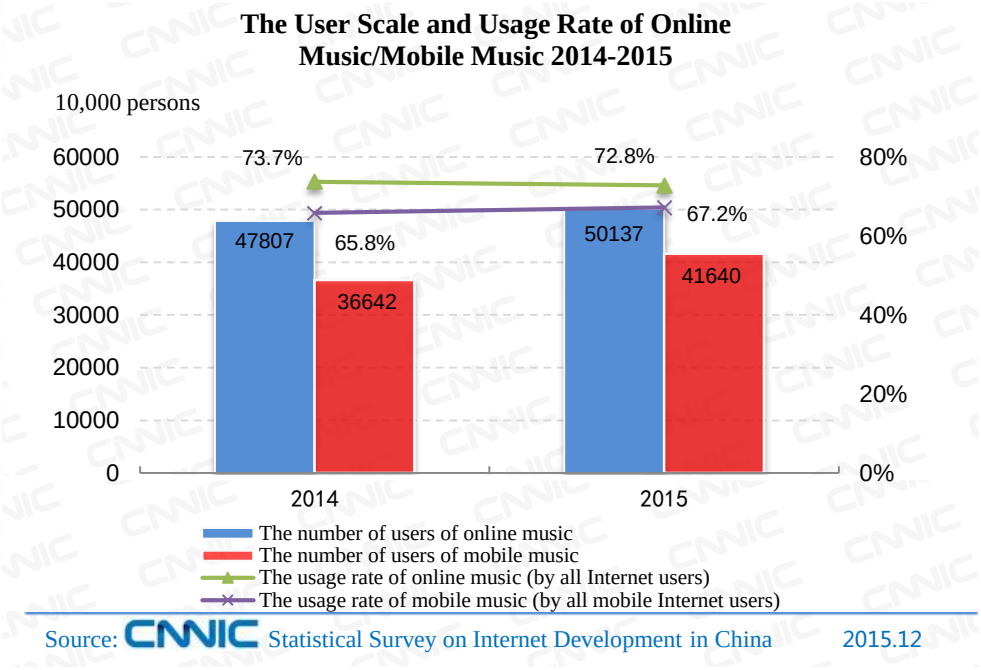


Figure 62 The User Scale and the Usage Rate of Online Music/Mobile Music 2014-2015

The copyright issue of online music received much government attention in 2015 and a campaign to directly regulate the online music industry has been launched. The issue that had troubled industry insiders for a long time has finally shown some improvement. Online music is a key part of the Internet content industry and its rapid rise is attributed to the development of streaming music in the age of mobile Internet.

But despite the rapid growth of mobile music listeners, music piracy has been a bottleneck to the development of the online music industry. To address the problem, the National Copyright Administration issued the Circular on Demanding Online Music Providers to Stop Marketing Unauthorized Music Works on July 8, 2015, and launched a campaign to regulate the copyright issue of online music. The campaign has significantly improved the online music's copyright situation. Cooperation is launched via the form of music copyright licensing agreement and attempts made to charge fees for downloading copyrighted music. For music copyright buyers, it's an inevitable choice to address their copyright dilemma against the tightening copyright regulation; for copyright holders, it means that their music is recognized by the market and creates an income source. As to the industrial chain, the 2015 campaign to regulate the copyright of online music plays a very positive role in establishing a healthy business mode for the online music industry, promoting the healthy circulation of copyright and helps boost the development of live performance and offline

shows.

v. The Development of Public Service Applications

5.1 Online education

By December 2015, 110 million people in China received online education[17], 16.0% of Internet users, including 53.03 million received it on their mobile phone, 8.6% of mobile Internet users. The rise and development of online education is propelled by the importance attached by the government to the education industry and the application and promotion of new technology such as cloud computing. Traditional education and training agencies, Internet giants and startups in vertical domains are all marching into the online education market. So far, online education is still in its infancy in China and it will take a long time to popularize it.

Online education can be divided into the following nine categories by content: primary and secondary school education (K12 education), preparation for professional exams, vocational & skill training, language training, preparation for study overseas, interest education, early childhood education, undergraduate/graduate education, and comprehensive education. In all these categories, primary and secondary school education won the highest usage rate of 37.7%, and has always been favored by the capital market because of its large user base and strong market demand. It's followed by vocational & skill training and preparation for professional exams, both with the usage rate above 20%. Along with social and economic progress, businesses will have higher demands for their employees, so in the future these two markets will enjoy broad prospects.

[17]Online education refers to the form of education that relies on information technology such as cloud computing, big data mining and multimedia, and via the vehicle of Internet. Compared with traditional education, it can break the limits of time and space, lower the threshold of education, provide diversified contents for learners and meet diverse learning needs.

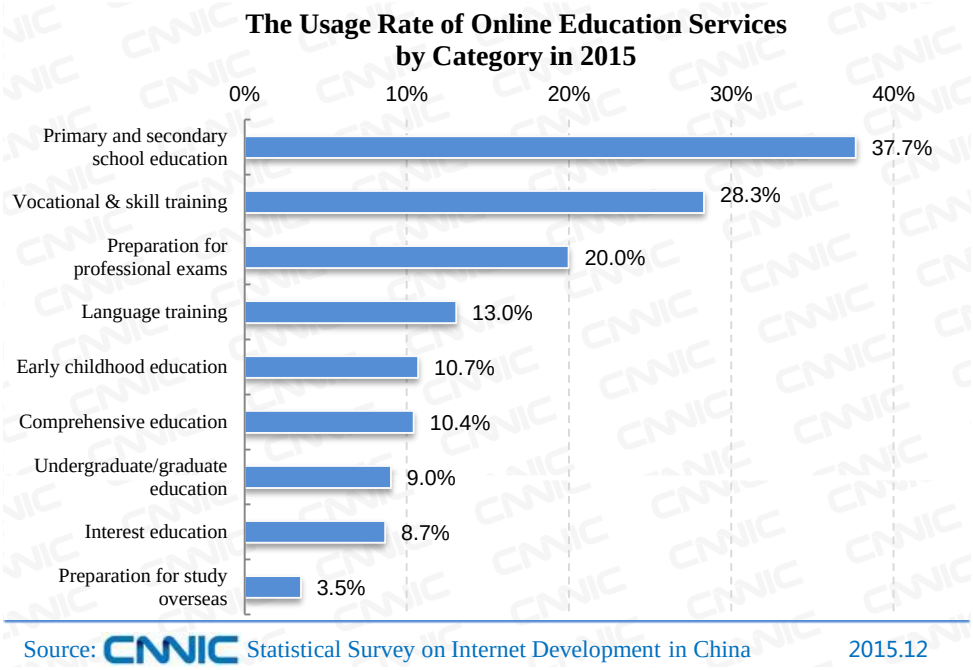


Figure 63The Usage Rate of Online Education Services by Category in 2015

The rise of Massive Open Online Course (MOOC) has also contributed to the prosperity of the online education market. In April 2015, the Ministry of Education issued Opinions on Strengthening the Construction, Application and Management of Open Online Courses in Institutions of Higher Education, driving the Chinese MOOC system onto the path of benign development with "institutions of higher education as the central player, support from the government, participation of the mass." Guided by the Ministry of Education, iCourse's MOOC of Chinese Universities, xuetangx.com of Tsinghua University, CNMOOC of Shanghai Jiaotong University and various types of MOOC platforms developed by other institutions of higher education and Internet companies have been launched, sharing the best higher education courses in China and sustaining the growth of online education users.

5.2 Online medical services

By December 2015, China had 152 million users of online medical services, 22.1% of Internet users. Compared with other Internet applications, the usage habit of online medical services still needs to be developed. In particular, online medical services before seeing a doctor are the most used: the combined usage rate of online healthcare information inquiry, online appointment making and online medical consultation was 18.4%; that of medical e-commerce and online health

management services was 4.6% and 3.9% respectively; and that of O2O medical services such as chronic care, checkup appointment making and healthcare services was each below 1%.

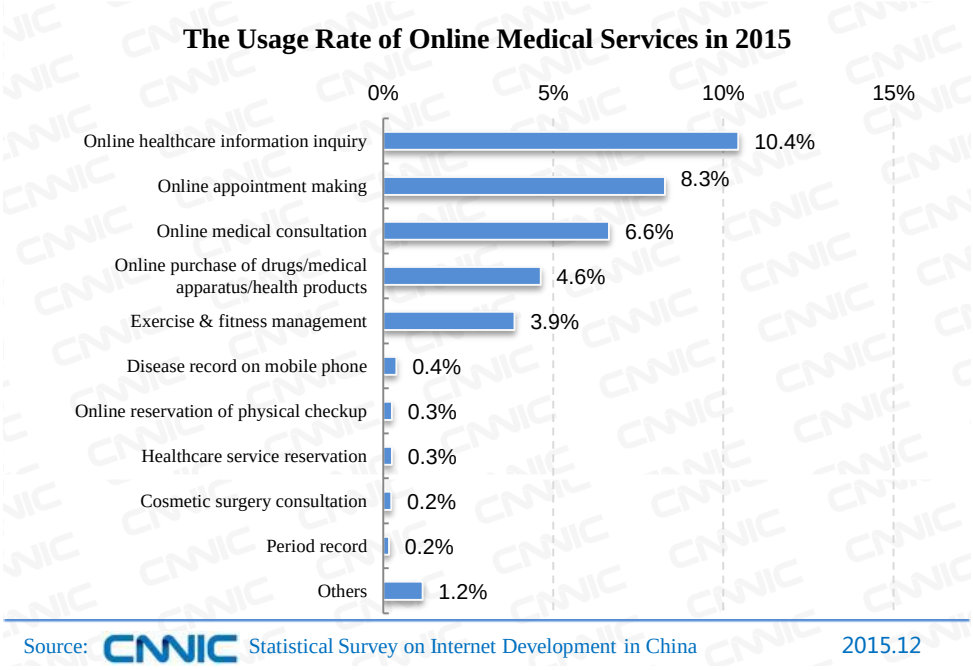


Figure 64 The Usage Rate of Online Medical Services in 2015

The industrial chain of online medical services has basically taken shape, with more intensive and rapid development at the middle and rear ends, that is, medical treatment and drugs. As far as medical treatment is concerned, "Internet+" has come to cover every link of medical treatment: there are daily management applications for health management; online medical consultation platforms, online appointment making and hospitalization guidance services before seeing a doctor; remote diagnosis services and online inquiry of diagnosis results for medical treatment; and doctor-patient interaction platforms, chronic care applications, wearable health devices and O2O healthcare services for post-treatment management of chronic diseases. As to drugs, a closed medical service chain is formed by online pharmaceutical information platforms, medical e-commerce and drug-related O2O services, doctor-patient interaction platforms and online pharmaceutical services covering links from the drug information to the purchase and use of drugs.

The year of 2014 saw the first explosion of online medical services which were still viewed as a market with huge potential to be tapped in 2015. Internet giants, startups, medical and pharmaceutical companies, real estate companies and insurance companies were eager to establish their position in this market. In particular, Internet giants tended to establish their framework of medical and health services by means of acquisition, while traditional businesses and startups

tended to make full use of their respective advantages and grab vertical segments of the market. Though there's no complete closed chain of online medical services yet, some platforms have initially established a client base and brand value, started to reach towards several links on the industrial chain and tried to construct an ecological system of medical services.

5.3 Online cab/car rental

In the first half of 2015, the cab rental service was the most sought after in the online cab/car rental[18]market, by 96.64 million users, 84.8% of all cab/car rental application users. In particular, the online cab rental service attracted 21.65 million users, 19.0% of all cab/car rental application users.

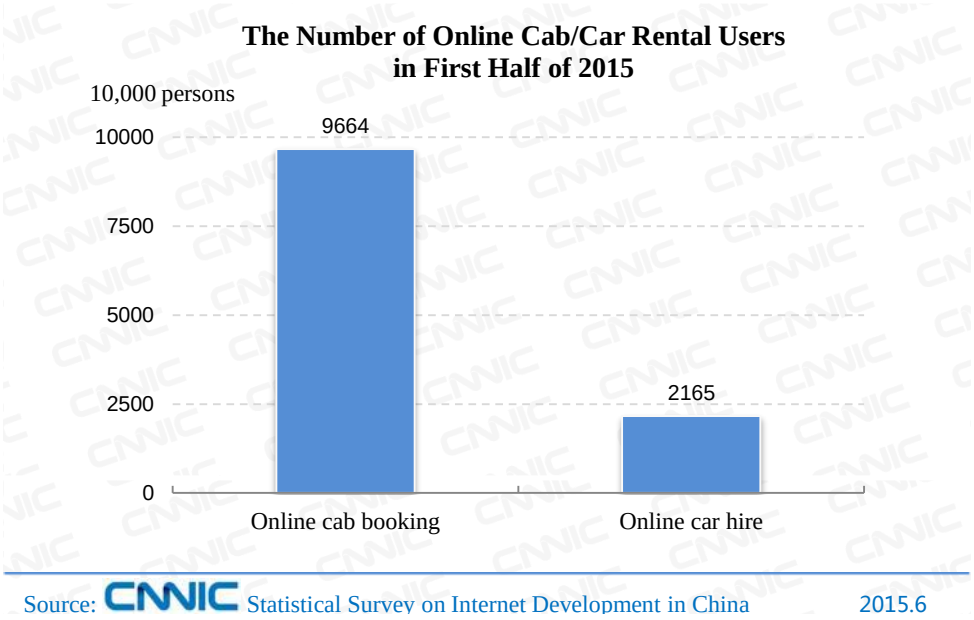


Figure 65 The Number of Online Cab/Car Rental Users in First Half of 2015

The online cab booking service improves the quality and efficiency of taxies, making it easier for users to call a taxi and meeting customers' demands for high-quality individualized services. CNNIC's survey data shows that 84.4% of the users of online taxi booking service will use taxi booking applications when they can't get one on the road side; 77.6% will do so when they find themselves in a strange place; 67.2% believe such applications help them get a taxi under bad weather; 65.9% use such applications when they need to go to the airport, train station

[18]Online cab/car rental refers to the booking of cabs or cars on the Internet, on platforms that pool vehicles and drivers meeting certain requirements and integrate supply and demand information to provide cab/car booking services for non-cruising purposes. The services provided include online booking of cabs and cars.

or make an appointment; 57.1% believe such applications are convenient and helpful and are used to using them in their daily life.

Online car hire service can reactivate idle resources and make them a good supplement to taxies. Taxies whose quantity is under strict control are hard to meet the growing individualized travel needs, so the car hire service, which is convenient, fine and of high quality, fills in the market blank and thus is able to attract a large scale of clients in no time. As to the usage frequency, the usage of car hire service is more occasional. The majority of its users is occasional users, taking up about 52.6% in the market. As to users' demands, the car rental service makes up for the insufficient market capacity. Most of the users won't use the car rental service unless they can't get a taxi, about 55.1% of the total; and only 23.3% of users will hire a car for their daily travel.

Appendix 1 I. Survey Methodology

I. Survey Methodology

i. Survey on Individual Internet Users

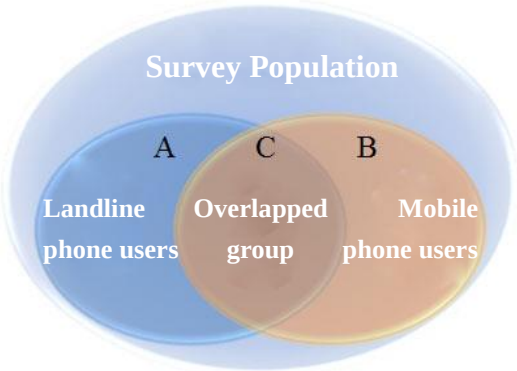
1.1 Survey Population

Permanent residents at the age of 6 or above who have landline telephones (including home phones, PHS and dormitory telephones) or mobile phones.

◇ Sample size

The overall sample size was 60,000, including 30,000 for landline telephone users and the other 30,000 for mobile phone users, 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 landline 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 as many Internet users as possible. The first sampling frame is subpopulation A, the people with landline telephones. The second sampling frame is subpopulation B, the people with mobile phones.

For the survey population with landline 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. 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 landline 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 the residence landline telephones are taken with almost the same probability in each district, city or prefecture, that is, the local number with more residence landline telephones have will more likely be taken, and for easier operability in the visit and implementation work, the residence fixed-line telephone numbers in each district, city and prefecture are taken according to the following procedures:

For mobile phone user groups, all local mobile area number 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 local mobile area number 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 landline 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 landline telephones are visited.

1.3 Survey Method

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 at the end of 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 landline telephones or mobile phones are negligible.

ii. Survey on Enterprises

2.1 Survey target

The overall targets of the telephone survey are those enterprises which have registered with industry and commerce administration authorities at all levels, and obtained the License of Business Corporation and the corporate capacity in accordance with Administrative Regulations of The People's Republic of China Governing the Registration of Legal Corporations and Regulations of the People's Republic of China on Administration of Registration of Companies.

2.2 Sampling method

This survey adopts the approach of stratified random sampling.

Thirty-one provinces, municipalities directly under the Central Government and autonomous regions are divided into Eastern China, Central China, West China and Northeast China based on their economic development according to relevant standards issued by National Bureau of Statistics of the PRC:

- East China consists of 10 provinces, municipalities directly under the central government and regions, namely Beijing, Tianjin, Hebei, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong and Hainan.
- Central China consists of six provinces, namely Shanxi, Anhui, Jiangxi, Henan, Hubei and Hunan.
- West China consists of 12 provinces, municipalities directly under the central government

and regions: Inner Mongolia, Gangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang.

- Northeast China consists of three provinces: Liaoning, Jilin and Heilongjiang.

Business entities are divided into eighteen major industry categories according to the statistical standard issued by National Bureau of Statistics. Based on the similarity and differences in the use of Internet by industries, CNNIC combines the 18 major industry categories into nine industrial categories:

No.	Industry
1	Agriculture, forestry, animal husbandry, and fishing
	Mining
	Production and supply industries for electric power, fuel gas and water
2	Manufacturing
3	Construction
	Transportation, storage and postal industries
4	Information transmission, computer service and software
	Finance
	Leasing and commercial service
5	Wholesale and retail
6	Accommodation and catering
	Resident service and other services
7	Real estate
8	Scientific research, technical service and geological survey
	Water conservancy, environment and public facility management
9	Education
	Health, social security and social welfare
	Culture, sports and entertainment

Cross stratification is conducted by two indicators: region and combined industries, with a total of 4*9=36 layers. Samples are equally distributed at each layer according to the distribution of business entities by province, city and industry in the second economic census in 2008. Business entities are randomly sampled from each layer for investigation, and the ultimate effective samples

cover a total of 3,000 enterprises.

2.3 Implementation method of the survey

This project adopts the approach of Computer Assisted Telephone Interview (CATI). Randomness and accuracy of the survey are controlled as follows:

1) Calls are made from 9 am to 6 pm on working days.

2）After the survey is accomplished, the telephone investigation company is asked to provide the detailed dialing information of all the phones for random checks.

3) To avoid the randomness being influenced by the put-through rate, numbers that cannot be connected should be dialed for at least three times.

4) To avoid the bias of investigator's personal perspective to the investigation, it is stated that items that are not needed to be read out cannot be given any prompt and the questions should be asked properly.

5) After telephone survey, the data are pre-processed to check the logical relation between the value of a variable and the variable itself. Unqualified samplings shall be all deleted.

iii. Online Survey

Online survey focuses on the use of typical Internet applications. CNNIC conducted online survey from December 1 to 31, 2015. The questionnaire is on the CNNIC website, and the links are available on major websites of China. Internet users voluntarily participated in and filled out the questionnaire.

iv. 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.

4.1. Total Number of IP Addresses

The data of IP addresses counted by provinces 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 were 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 for IP addresses, will require our IP address allocation organizations to report the IP addresses they own biannually. 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.

4.2. Total Number of Domain Names and Websites in China

Total numbers of domain names and websites in China were derived from:

The number of domain names: The number of domain names with .CN and .中国 comes from CNNIC database; Domestic registrars assisted in providing the number of gTLDs in China within the surveyed period, while past data comes from that released by WebHosting.Info, a domain name statistical agency.

The 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.

4.3. International Internet Gateway Bandwidth

Through the reporting system, the Ministry of Industry and Information Technology can obtain on a regular basis the number of 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 or Netizens:** Chinese residents at the age of six or above who have used Internet in the past six months.

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

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

◇ **Rural Internet Users or Rural Netizens:** Internet users who have been living in rural areas of China in the past six months.

◇ **Urban Internet Users or Urban Netizens:** Internet users who have been living in urban areas of China in the past six months.

◇ **IP Address:** As the basic resource in Internet, the IP address functions to identify online

computers, servers and other devices on Internet. Connection with the Internet can be realized only when an IP address (in any form) is acquired.

◇ **Domain Name:** Domain name in the Report only refers to the English domain name, which is a string comprised of numbers, letters, and hyphens (-) and separated by dots (.). It is a hierarchical structural Internet address identifier corresponding to the IP address. 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" and ".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 the Chinese ccTLD ".CN" and gTLD as long as the registrant of the domain name 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, data in this Report only refer to mainland China, excluding Hong Kong, Macao and Taiwan.

◇ **Deadline of survey data:** The deadline of the statistical survey data is December 31, 2015.

Appendix 2Tables of Fundamental Internet Resources

Table 1 The Number of IPv4 Addresses in Different Regions of China

Region	Number of Addresses	Equivalence
Mainland China	336,519,680	20A+14B+226C
Taiwan	35,486,976	2A+29B+125C
Hong Kong SAR	12,356,608	188B+140C
Macau SAR	333,056	5B+21C

Table 2 Allocation of IPv4 Addresses among Organizations in Mainland China

Organization	Number of Addresses	Total Number of IPv4 Addresses
China Telecom	125,761,280	7A+126B+247C
China United Network Communications Corporation	69,866,752[1]	4A+42B+21C
CNNIC IP Address Allocation Alliance	59,672,832 [2]	3A+142B+137C
China Mobile Communications Corporation	35,294,208	2A+28B+19C
China Education and Research Network	16,649,728	254B+14C
China Tietong Telecommunications Corporation.	15,796,224 [3]	241B+8C
Others	13,478,656	205B+171C
Total	336,519,680	20A+14B+226C

Data sources: 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 Assignment Alliance of China. So far, the total number of IPv4 addresses held by the members of CNNICIP IP Address Assignment Alliance is 81,785,088, equivalent to 4A+223B+241C. The IPv4 addresses of the members of IP Address Assignment Alliance of China listed in the above table do not include those IPv4 addresses already assigned to former China Unicom and Tietong.

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

Note 4: Statistical data above is up to December 31, 2015.

Table 3 The Number of IPv6 Addresses in Different Regions of China

Region	Number of Addresses
Mainland China	20,594 blocks/32
Taiwan	2,360 blocks/32
Hong Kong SAR	248 blocks/32
Macau SAR	5 blocks/32

Table 4 IPv6 Address Allocation in Mainland China

Organization name	The Number of IPv6 Addresses (/32 1)
CNNIC IP Address Allocation Alliance	5,855 [2]
China Telecom	4,099
China United Network Communications Corporation	4,097
China Mobile Communications Corporation	4,097
China Tietong Telecommunications Corporation.	2,049 [3]
China Education and Research Network	18
China Science & Technology Network	17 [4]
Others	362

Data sources: 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 IP Address Assignment Alliance of CNNICIP are 7,921 block/32. The IPv6 addresses held by the members of IP Address Assignment 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 Telecommunications Corporation are assigned by CNNIC;

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

Note 5: Statistical data above isup to December 31, 2015.

Table 5 The Proportion of IPv4 Address in Each Province/Autonomous Region/Municipality Directly under the Central Government

Province/Region/Municipality	Proportion
Beijing	25.45%
Guangdong	9.51%
Zhejiang	6.46%
Shandong	4.91%
Jiangsu	4.76%
Shanghai	4.46%
Liaoning	3.35%
Hebei	2.85%
Sichuan	2.78%
Henan	2.64%
Hubei	2.40%
Hunan	2.37%
Fujian	1.94%
Jiangxi	1.74%
Chongqing	1.68%
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	8.95%
Total	100.00%

Data sources: APNIC and CNNIC

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

Note 2: Statistical data above is up to December 31, 2015.

Table 6 Number of Domain Names, .CN Domain Names and .中国 Domain Names by Province

Province/Region/Municipality	Domain Name		Including: .CN Domain Name		.中国 Domain Names	
	Number	Proportion in total domain names	Number	Proportion in total CN domain names	Number	Proportion in total .中国 domain names
Guangdong	4,971,380	16.0%	2,494,617	15.3%	40,310	11.4%
Beijing	4,857,287	15.7%	2,496,687	15.3%	124,818	35.4%
Zhejiang	2,087,873	6.7%	1,099,503	6.7%	18,046	5.1%
Shanghai	2,047,614	6.6%	925,805	5.7%	14,995	4.3%
Fujian	2,006,013	6.5%	899,579	5.5%	11,793	3.3%
Shandong	1,993,458	6.4%	1,419,776	8.7%	16,103	4.6%
Hubei	1,331,569	4.3%	969,740	5.9%	5,366	1.5%
Jiangsu	1,303,497	4.2%	464,561	2.8%	19,313	5.5%
Sichuan	1,044,052	3.4%	333,665	2.0%	11,603	3.3%
Henan	1,032,483	3.3%	435,841	2.7%	5,113	1.4%
Heilongjiang	721,259	2.3%	582,049	3.6%	7,857	2.2%
Hebei	603877	1.9%	216,158	1.3%	5,908	1.7%
Hunan	585,873	1.9%	273,709	1.7%	3,675	1.0%
Anhui	488,784	1.6%	198,219	1.2%	3,480	1.0%
Liaoning	481,901	1.6%	211,081	1.3%	10,223	2.9%
Guangxi	376,388	1.2%	226,363	1.4%	2,886	0.8%
Jiangxi	356,249	1.1%	171,808	1.1%	3,555	1.0%
Tianjin	349,484	1.1%	101,637	0.6%	2,614	0.7%
Chongqing	335,075	1.1%	113,812	0.7%	6,529	1.9%
Shaanxi	324,972	1.0%	120,887	0.7%	4,434	1.3%
Hainan	267,044	0.9%	36,571	0.2%	515	0.1%
Shanxi	215,073	0.7%	81,210	0.5%	2,744	0.8%
Yunnan	169,587	0.5%	71,331	0.4%	5,380	1.5%
Jilin	147,495	0.5%	50,925	0.3%	2,836	0.8%
Gansu	136,857	0.4%	36,102	0.2%	665	0.2%
Guizhou	136,166	0.4%	67,693	0.4%	1,696	0.5%
Xinjiang	86,795	0.3%	39,440	0.2%	1,057	0.3%
Inner Mongolia	86,570	0.3%	32,469	0.2%	1,886	0.5%
Ningxia	38,130	0.1%	9,885	0.1%	528	0.1%
Qinghai	25,522	0.1%	5,557	0.0%	200	0.1%
Tibet	11,486	0.0%	4,370	0.0%	275	0.1%
Others	2,393,807	7.7%	2,165,650	13.2%	16,382	4.6%

Total	31,013,620	100.0%	16,356,700	100.0%	352,785	100.0%

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

Table 7 The Number of Websites by Province

	Number of Websites	Proportion in Total Number of Websites
Guangdong	670,539	15.9%
Beijing	514,532	12.2%
Shanghai	371,696	8.8%
Zhejiang	262,049	6.2%
Fujian	247,506	5.9%
Shandong	226,118	5.3%
Jiangsu	214,247	5.1%
Henan	166,217	3.9%
Sichuan	158,218	3.7%
Hebei	119,178	2.8%
Liaoning	111,056	2.6%
Hubei	86,625	2.0%
Hunan	59,015	1.4%
Anhui	55,581	1.3%
Shanxi	49,713	1.2%
Shaanxi	48,896	1.2%
Chongqing	44,396	1.0%
Tianjin	44,097	1.0%
Guangxi	36,876	0.9%
Heilongjiang	36,795	0.9%
Jiangxi	30,979	0.7%
Jilin	24,921	0.6%
Yunnan	18,727	0.4%
Hainan	14,993	0.4%
Inner Mongolia	14,499	0.3%
Guizhou	13,021	0.3%
Gansu	9,364	0.2%
Xinjiang	8,672	0.2%
Ningxia	5,051	0.1%
Qinghai	2,605	0.1%
Tibet	1,076	0.0%
Others	562,035	13.3%
Total	4,229,293	100.0%

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

Table 8 Web Pages Classified by Updating Cycle

Web Page Updating Cycle	Proportion
Update weekly	4.5%
Update monthly	24.4%
Update every three months	33.0%
Update every six months	27.6%
Update every more than six months	10.5%
Total	100%

Data source: Baidu Online Network Technology (Beijing) Co., Ltd.

Table 9 Web Pages Classified by Suffix

Web Page Suffix	**Proportion**
html	34.4%
htm	3.7%
/	10.4%
shtml	2.5%
asp	3.0%
php	5.8%
txt	0.0%
nsf	0.0%
xml	0.0%
jsp	2.0%
cgi	0.0%
pl	0.0%
aspx	9.5%
do	0.6%
dll	0.0%
jhtml	0.0%
cfm	0.0%
php3	0.0%
phtml	0.0%
Other suffixes	28.1%
Total	100%

Data source: Baidu Online Network Technology (Beijing) Co., Ltd.

Table 10 Web Pages Classified by Multimedia Form

Web Page Multimedia Form	Proportion (in multimedia web pages)
jpg	18.6%
gif	37.0%
zip	30.3%
swf	2.0%
doc	10.2%
pdf	1.7%
rm	0.0%
mid	0.0%
ram	0.0%
mp3	0.0%
ppt	0.2%
mpg	0.0%
Other multimedia	0.0%
Total	100%

Data source: Baidu Online Network Technology (Beijing) Co., Ltd.

Table 11 The Number of Web Pages by Province

	Total of Web Pages after Duplication Removed	Static	Dynamic	Proportions of Static to Dynamic
Anhui	2,453,595,510	1,344,692,542	1,108,902,968	1.21
Beijing	85,018,402,065	50,318,315,448	34,700,086,617	1.45
Fujian	5,465,807,685	3,442,858,097	2,022,949,588	1.70
Gansu	266,891,205	171,214,001	95,677,204	1.79
Guangdong	22,609,885,560	13,796,889,689	8,812,995,871	1.57
Guangxi	554,731,725	238,995,999	315,735,726	0.76
Guizhou	329,923,440	159,244,957	170,678,483	0.93
Hainan	1,752,100,110	760,151,548	991,948,562	0.77
Hebei	6,309,499,410	4,190,760,794	2,118,738,616	1.98
Henan	9,203,839,590	6,885,711,568	2,318,128,022	2.97
Heilongjiang	611,884,980	336,467,285	275,417,695	1.22
Hubei	2,460,852,945	1,500,684,597	960,168,348	1.56
Hunan	2,933,540,880	1,792,250,984	1,141,289,896	1.57
Jilin	1,344,793,305	794,867,522	549,925,783	1.45
Jiangsu	11,999,673,870	9,134,613,893	2,865,059,977	3.19
Jiangxi	3,227,674,155	1,847,649,702	1,380,024,453	1.34
Liaoning	1,840,546,890	1,044,620,106	795,926,784	1.31
Inner Mongolia	452,043,120	175,172,325	276,870,795	0.63
Ningxia	334,951,200	89,923,766	245,027,434	0.37
Qinghai	34,051,080	20,625,042	13,426,038	1.54
Shandong	3,888,230,970	2,617,832,996	1,270,397,974	2.06
Shanxi	2,175,181,065	1,368,307,909	806,873,156	1.70
Shaanxi	1,207,433,280	681,582,147	525,851,133	1.30
Shanghai	10,237,810,140	6,738,425,607	3,499,384,533	1.93
Sichuan	4,367,708,520	2,317,793,904	2,049,914,616	1.13
Tianjin	2,565,386,970	1,031,752,537	1,533,634,433	0.67
Tibet	102,444,720	41,394,383	61,050,337	0.68
Xinjiang	515,367,105	170,837,606	344,529,499	0.50
Yunnan	1,303,286,055	523,485,460	779,800,595	0.67
Zhejiang	25,322,356,650	16,769,950,339	8,552,406,311	1.96
Chongqing	1,406,329,470	1,140,761,643	265,567,827	4.30
The whole country	212,296,223,670	131,447,834,396	80,848,389,274	1.63

Data source: Baidu Online Network Technology (Beijing) Co., Ltd.

Table 12 The Number of Web Page Bytes by Province

	Total Page Size	Average Page Size (KB)

Anhui	115,374,117,278	47
Beijing	7,494,680,191,628	88
Fujian	312,834,107,805	57
Gansu	8,907,215,636	33
Guangdong	1,398,620,155,764	62
Guangxi	28,226,426,583	51
Guizhou	18,163,391,938	55
Hainan	73,783,813,972	42
Hebei	445,843,163,458	71
Henan	565,810,140,071	61
Heilongjiang	44,422,237,943	73
Hubei	108,875,143,828	44
Hunan	168,901,119,184	58
Jilin	59,028,274,117	44
Jiangsu	597,128,105,218	50
Jiangxi	93,644,594,978	29
Liaoning	117,815,107,858	64
Inner Mongolia	23,535,961,160	52
Ningxia	10,409,163,091	31
Qinghai	3,684,968,805	108
Shandong	238,564,172,676	61
Shanxi	110,545,119,870	51
Shaanxi	43,921,175,593	36
Shanghai	617,890,167,957	60
Sichuan	232,860,166,662	53
Tianjin	165,517,101,996	65
Tibet	7,187,181,567	70
Xinjiang	20,042,823,862	39
Yunnan	85,153,072,783	65
Zhejiang	1,505,360,187,917	59
Chongqing	99,204,346,167	71
The whole country	14,815,932,917,365	70

Data source: Baidu Online Network Technology (Beijing) Co., Ltd.

Table 13 Proportion of Web Page Classified by Updating Cycle in Each Province

	Update weekly	Update monthly	Update every three months	Update every six months	Update more than every six months
Anhui	5.8%	31.4%	38.4%	19.1%	5.3%
Beijing	3.8%	22.6%	32.9%	29.6%	11.0%
Fujian	5.1%	27.6%	34.0%	24.0%	9.3%
Gansu	10.2%	25.4%	32.4%	22.1%	9.9%
Guangdong	4.8%	25.1%	34.1%	25.2%	10.8%
Guangxi	4.1%	28.7%	36.4%	21.7%	9.1%
Guizhou	4.2%	29.4%	32.6%	20.8%	13.1%
Hainan	4.3%	23.3%	27.8%	21.9%	22.6%
Hebei	5.0%	26.4%	30.3%	25.9%	12.5%
Henan	4.5%	23.8%	32.6%	29.8%	9.4%
Heilongjiang	6.0%	35.4%	35.1%	15.4%	8.1%
Hubei	2.9%	19.0%	37.0%	32.1%	9.0%
Hunan	5.7%	28.9%	34.6%	24.0%	6.8%
Jilin	7.0%	28.8%	32.2%	21.2%	10.9%
Jiangsu	4.6%	26.5%	36.7%	24.8%	7.4%
Jiangxi	3.4%	19.4%	30.6%	30.9%	15.7%
Liaoning	5.3%	26.9%	37.4%	22.5%	8.0%
Inner Mongolia	3.3%	24.9%	41.1%	24.9%	5.8%
Ningxia	4.0%	24.0%	37.6%	30.3%	4.1%
Qinghai	4.1%	10.4%	28.6%	37.3%	19.7%
Shandong	5.1%	26.5%	29.9%	28.0%	10.5%
Shanxi	3.9%	22.5%	37.9%	26.4%	9.3%
Shaanxi	3.9%	21.5%	25.8%	42.9%	5.9%
Shanghai	4.7%	24.0%	31.7%	26.1%	13.5%
Sichuan	6.2%	31.7%	33.1%	21.9%	7.2%
Tianjin	2.4%	14.5%	35.0%	37.8%	10.2%
Tibet	4.5%	34.5%	34.2%	22.0%	4.7%
Xinjiang	9.9%	39.6%	29.2%	14.8%	6.6%
Yunnan	5.3%	28.8%	39.2%	21.2%	5.6%
Zhejiang	5.2%	25.6%	30.3%	28.3%	10.5%
Chongqing	6.8%	32.4%	36.1%	18.3%	6.4%
The whole country	4.5%	24.4%	33.0%	27.6%	10.5%

Data source: Baidu Online Network Technology (Beijing) Co., Ltd.

Table 14 Proportion of Web Page Classified by Coding Type in Each Province

	Chinese	Traditional Chinese	English	Others
Anhui	99.4%	0.1%	0.3%	0.2%
Beijing	98.1%	1.0%	0.2%	0.7%
Fujian	99.4%	0.0%	0.2%	0.3%
Gansu	99.3%	0.0%	0.3%	0.4%
Guangdong	99.2%	0.2%	0.3%	0.4%
Guangxi	98.9%	0.1%	0.4%	0.6%
Guizhou	98.8%	0.1%	0.9%	0.3%
Hainan	99.8%	0.1%	0.1%	0.0%
Hebei	99.7%	0.1%	0.1%	0.1%
Henan	98.8%	0.7%	0.2%	0.3%
Heilongjiang	99.0%	0.0%	0.9%	0.1%
Hubei	98.5%	0.2%	1.0%	0.3%
Hunan	99.4%	0.1%	0.3%	0.2%
Jilin	98.9%	0.2%	0.7%	0.2%
Jiangsu	99.4%	0.1%	0.2%	0.4%
Jiangxi	99.8%	0.1%	0.1%	0.0%
Liaoning	99.5%	0.1%	0.1%	0.3%
Inner Mongolia	99.0%	0.1%	0.9%	0.1%
Ningxia	99.4%	0.0%	0.0%	0.6%
Qinghai	99.7%	0.0%	0.1%	0.2%
Shandong	99.4%	0.1%	0.3%	0.2%
Shanxi	86.7%	13.0%	0.2%	0.1%
Shaanxi	97.5%	0.0%	0.5%	2.0%
Shanghai	98.1%	1.2%	0.2%	0.6%
Sichuan	99.3%	0.1%	0.4%	0.2%
Tianjin	99.8%	0.0%	0.2%	0.0%
Tibet	100.0%	0.0%	0.0%	0.0%
Xinjiang	98.9%	0.0%	0.2%	0.9%
Yunnan	98.7%	0.7%	0.2%	0.4%
Zhejiang	97.8%	0.1%	1.9%	0.3%
Chongqing	98.8%	0.4%	0.3%	0.5%
The whole country	98.4%	0.7%	0.4%	0.5%

Data source: Baidu Online Network Technology (Beijing) Co., Ltd.

Appendix 3 Organizations Supporting the Survey

We would like to express our heartfelt thanks to the following organizations (listed below in no particular order) which have provided strong support for the availability of online questionnaires for this survey and the collection of the fundamental resources data.

China Telecom

China International Electronic Commerce Center

China Education and Research Network Center

Network Center of CSTNet

China United Network Communications Limited

China Mobile Communications Corporation

Government Organ and Public Institution Domain Name Registration Network

Baidu Online Network Technology (Beijing) Co., Ltd

Beijing East Netscape Information Technology Co., Ltd

Beijing Guoxu Network Science and Technology Co., Ltd

51.net Co., Ltd.

Beijing WanweiTonggang Science and Technology Co., Ltd.

Beijing SinoNetsXinye Network and Telecommunication Co., Ltd

SanFront Information Technology Company

Beijing Zihai Science and Technology Co., Ltd.

Chengdu Feishu Science and Technology Co., Ltd.

Chengdu West Dimension Digital Technology Co., Ltd

Foshan Yidong Network Co., Ltd.

Fujian Litian Network Co., Ltd.

Guangdong Eranet International Limited

GZ.COM

Guizhou Eric Enterprise Corporation

Hangzhou Dayi Commercial Network Co., Ltd.

Hangzhou E-Commerce Connection Science and Technology Co., Ltd.

Jiangsu Bangning Science and Technology Co., Ltd.

NAWANG.CN

Xiamen 35.com Technology Co., Ltd

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

Xiamen ZZY Network Service Co., Ltd

Xiamen eName Technology Co., Ltd.

Oray

WWW.CHINAFU.COM

CNDNS.COM

Shanghai Yovole Computing Networks Co., Ltd

WWW.51WEB.Com

WWW.CNKUAI.COM

XinnetHuatong Information Technology Co., Ltd

Zhengzhou Zitian Network Technology Co.,

Alibaba Communication Technology (Beijing) Co., Ltd.

Zhongqi Power S&T Co., Ltd

WWW.CQHOT.CN

Appendix 4An Introduction to China Internet Data Platform

cnidp.cn -- open and shared Internet data and services

- ◆ Launched and run by CNNIC
- ◆ Providing Internet statistical data and services free of charge
- ◆Reflecting the situation of Internet development in China objectively and timely

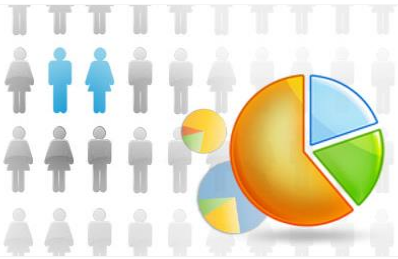
Website address of the platform: www.cnidp.cn

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 Internet development situation in China and provide multifaceted decision-making support for the participants of the Internet industry through the collection of Internet using behavior data of Chinese Internet users samples by the survey clients continuously in real time and by analyzing those data statistically.

Function Demonstration

Statistical Data
The report provides weekly, monthly, quarterly and semi-yearly statistical data on several indicators such as the coverage, visits, web page views, and visit duration about mainstream websites/software in China, and the data update interval is no more than 3days.



Users' Features
The report provides data on multi-dimensional structural distribution including sex, age, educational background, profession, income, location and the tier of city about mainstream websites/software in China.

Overlap Analysis
The report reflects the overlapping of user groups and the structural distribution of different user groups of different websites/software.

Trend Comparison
The report provides detailed historical statistical data that accurate to the day to reflect the historical change trend of mainstream websites/software in China