

Broadband China Strategy and its Implementation

China Academy of Information &
Communications Technology

(China Academy of Telecom Research of MIIT)

中国信息通信研究院

(工业和信息化部电信研究院)

厚德實學 興業致遠

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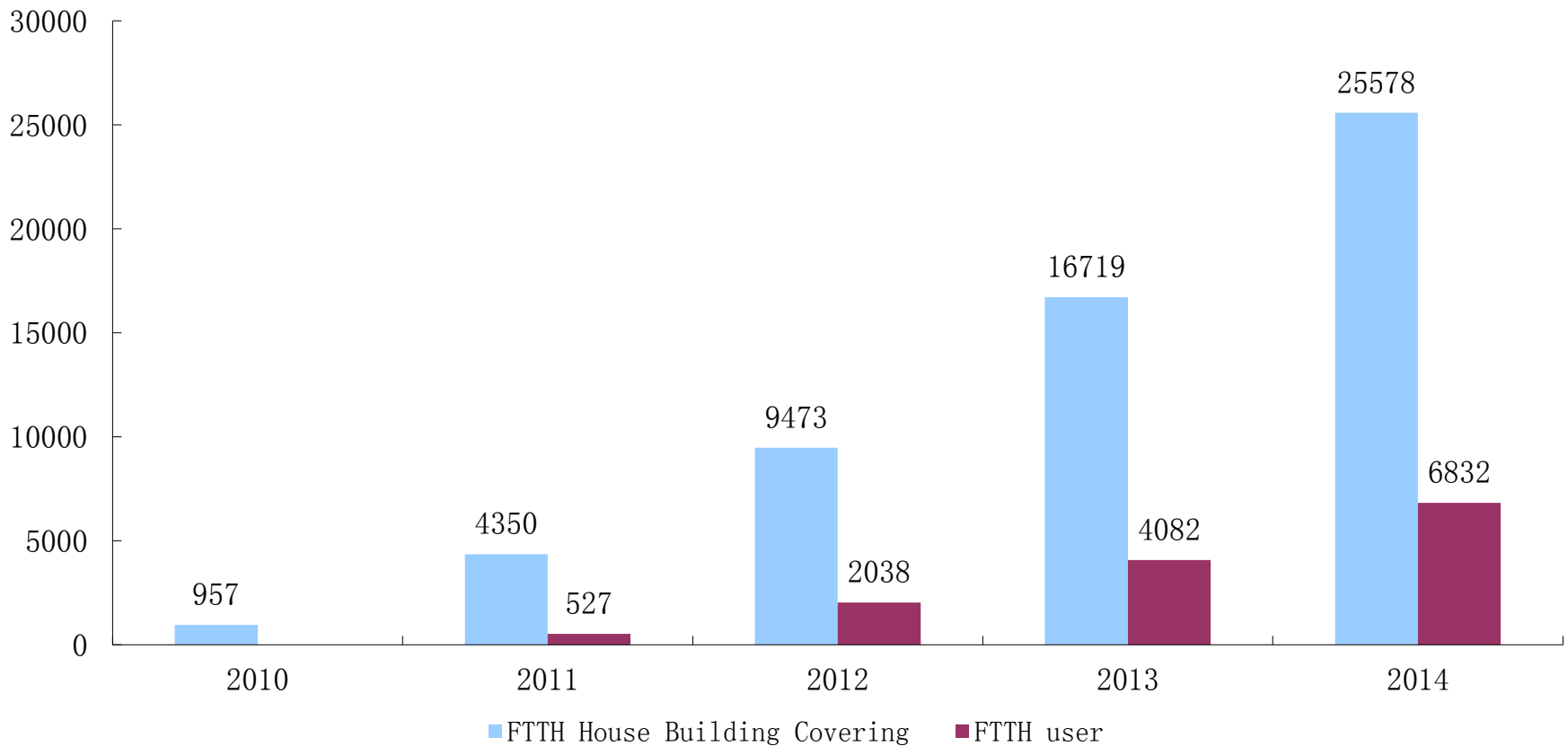
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The Experience from Broadband China strategy

Fixed broadband—Network construction speed up

Rapid coverage of FTTH and high-speed growth of FTTH subscribers

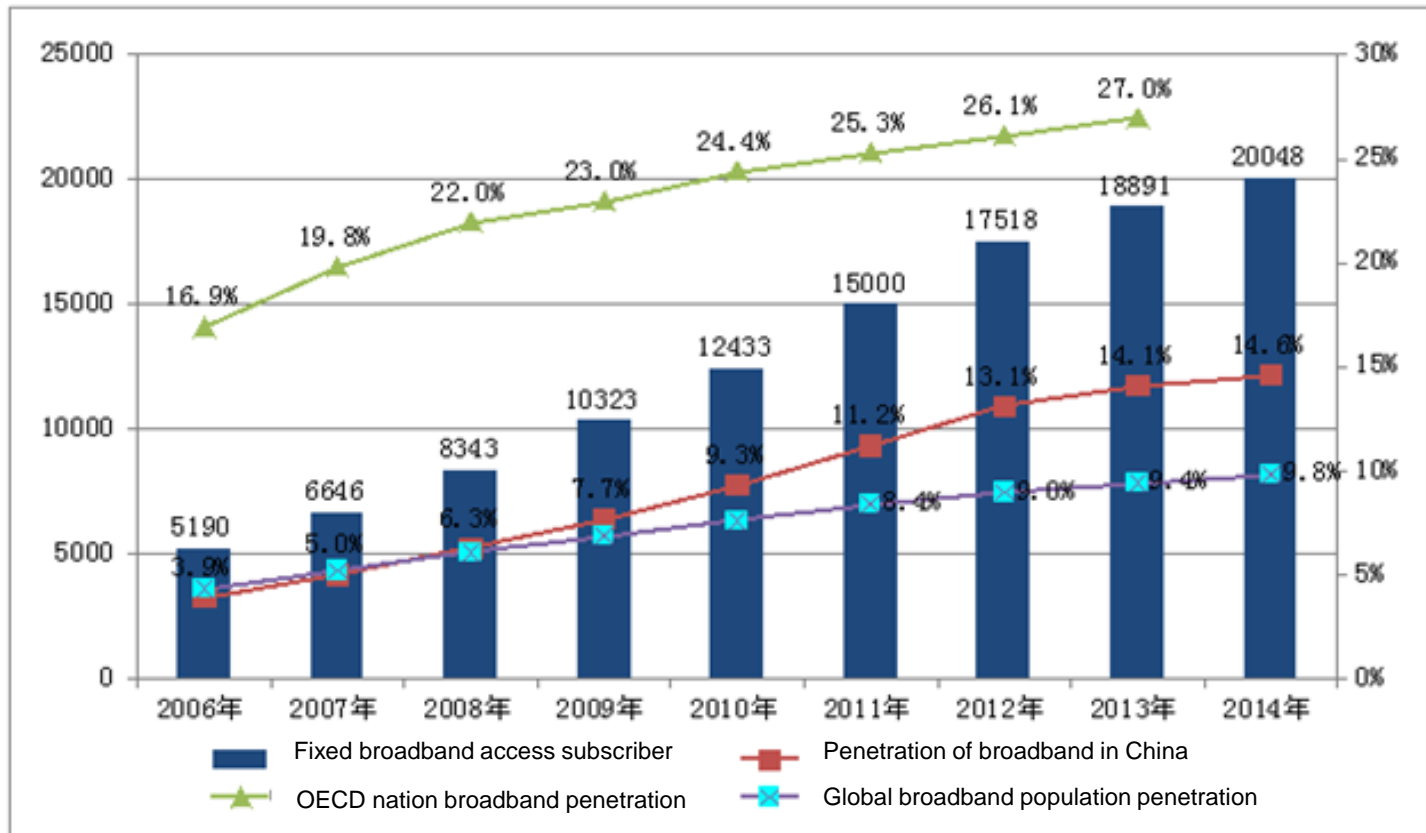
- 256 million households have been covered by FTTH
- FTTH subscribers reached to 68.32 million households



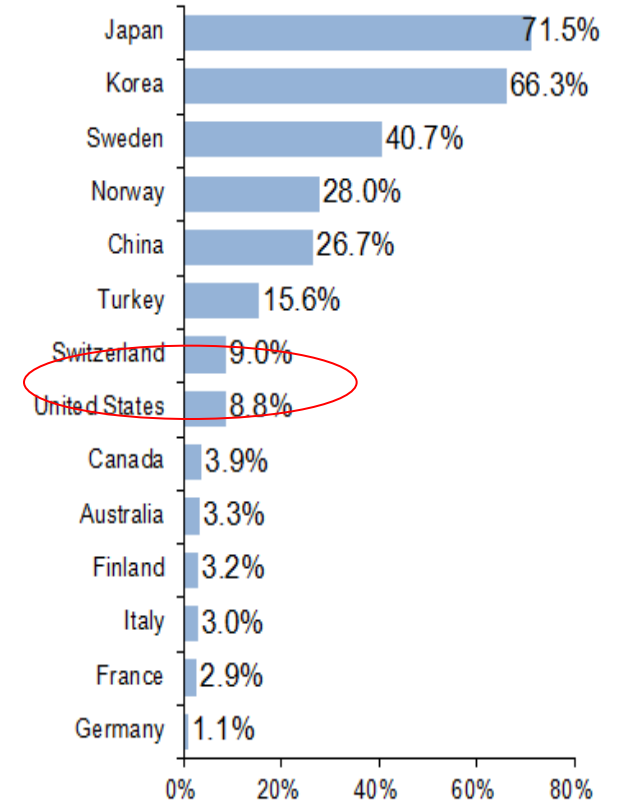
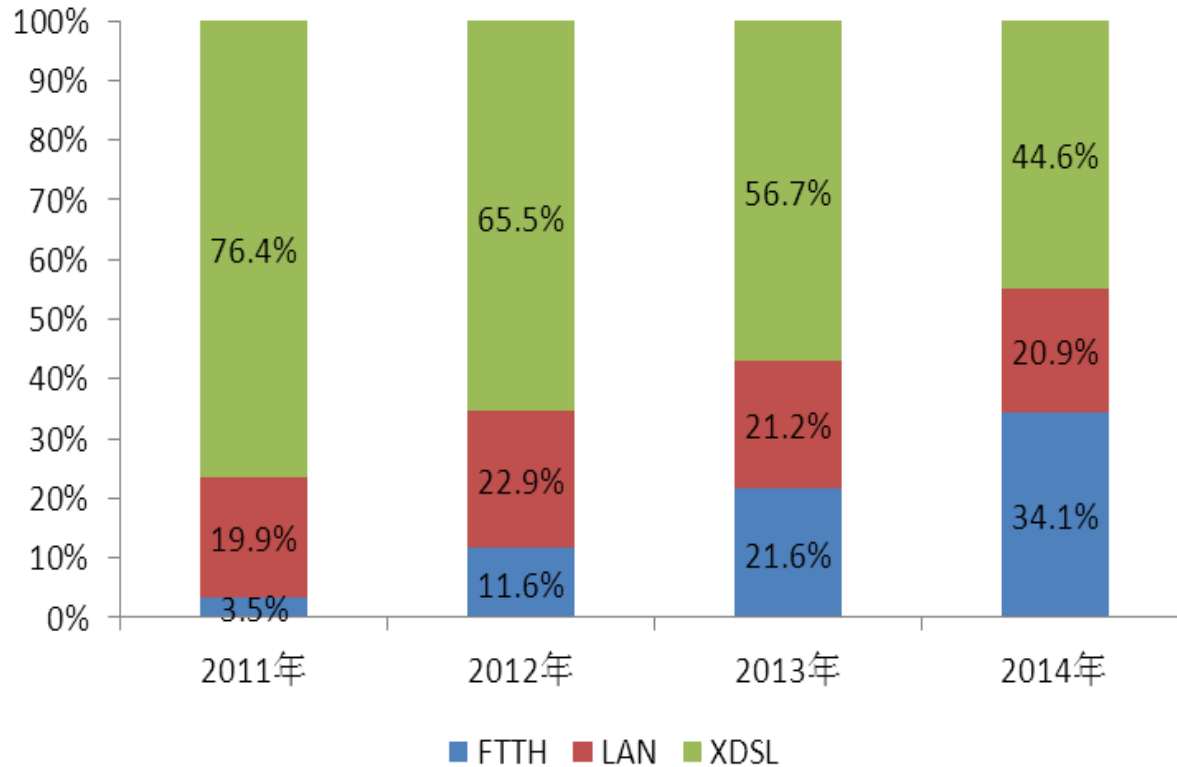
Fixed broadband—Subscribers keep fast growing(1/3)

Stable growth of fixed broadband subscribers

- By the end of 2014, the number of total fixed broadband subscribers surmounted 200 million.
- The gap between China and the average level of OECD countries has been reduced from 15.7% in 2008 to 12.9% in 2013.



Fixed broadband—FTTH subscribers grow significantly (2/3)



Proportion of FTTH outstripping the average level of OECD countries

- According to OECD, the average proportion of fiber users in OECD countries was 16.5% in Jun 2014 meanwhile that in China was 26.7%.

Note: OECD statistics, fiber users include FTTH and FTTB

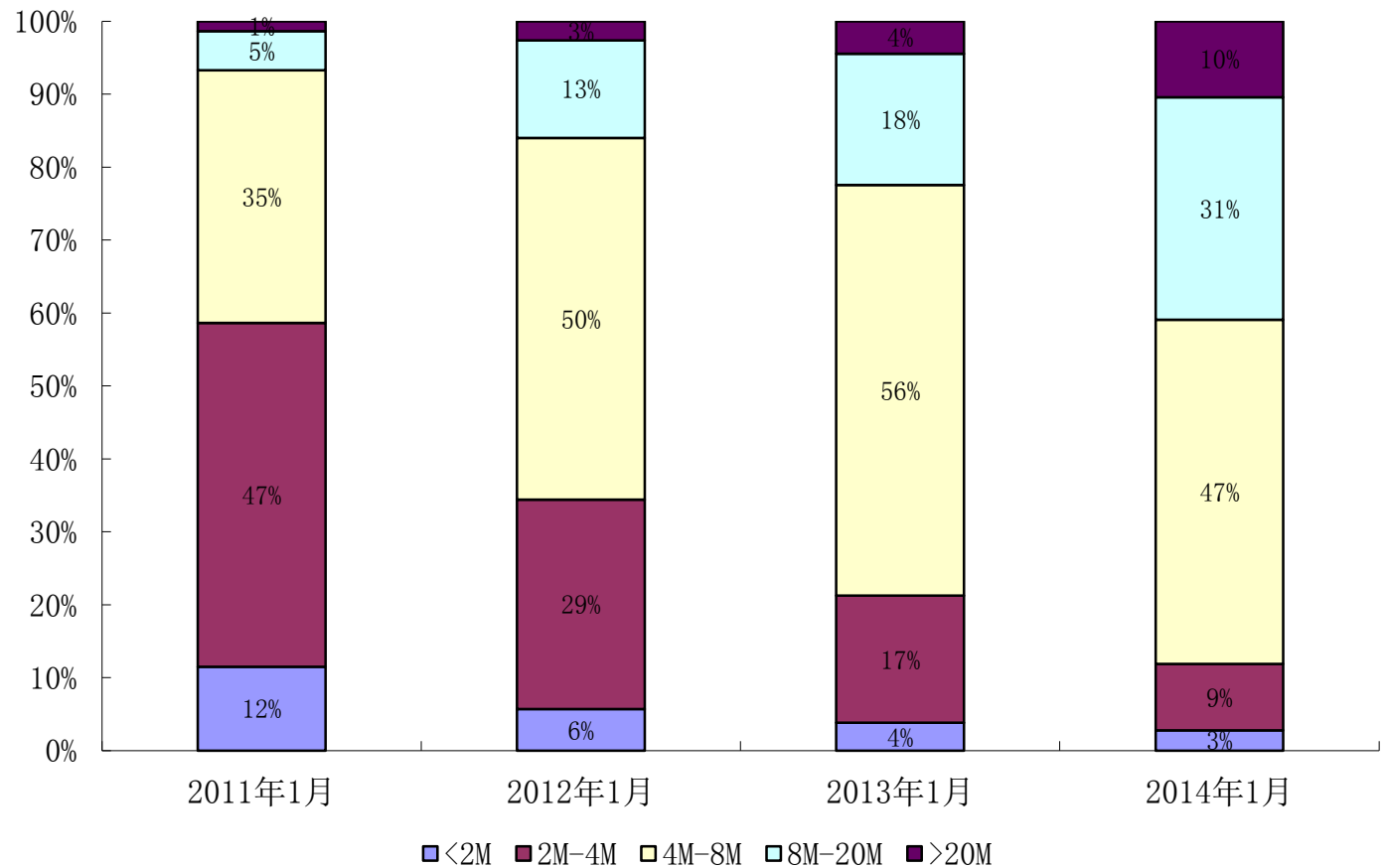
Percentage of fibre connections in total broadband among countries reporting fibre subscribers, June 2014

Fixed broadband—The access speed was promoted constantly(3/3)

Main speed for broadband access moving forward from 4 Mbit/s towards 8 Mbit/s

- By the end of 2014, proportion of 4M and above accounted for 88% and that of 8M and above accounted for 41%, which shows that Chinese subscribers are entering into a high speed era.

subscriber
proportion in
different rate levels

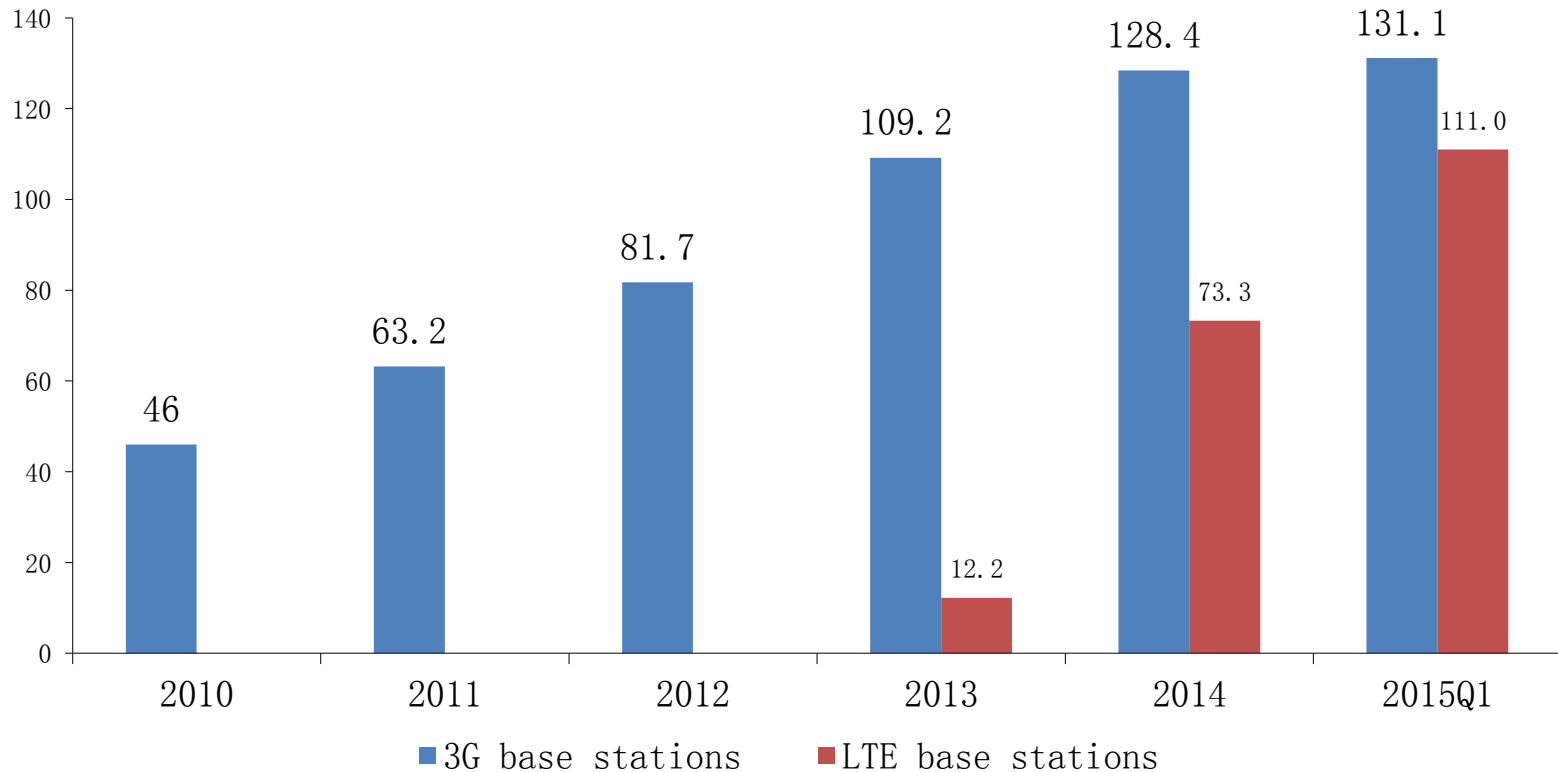


Mobile broadband—Network construction accelerate

After the release of 4G license in Dec. 2013, the deployment of LTE accelerated.

By the end of 2014

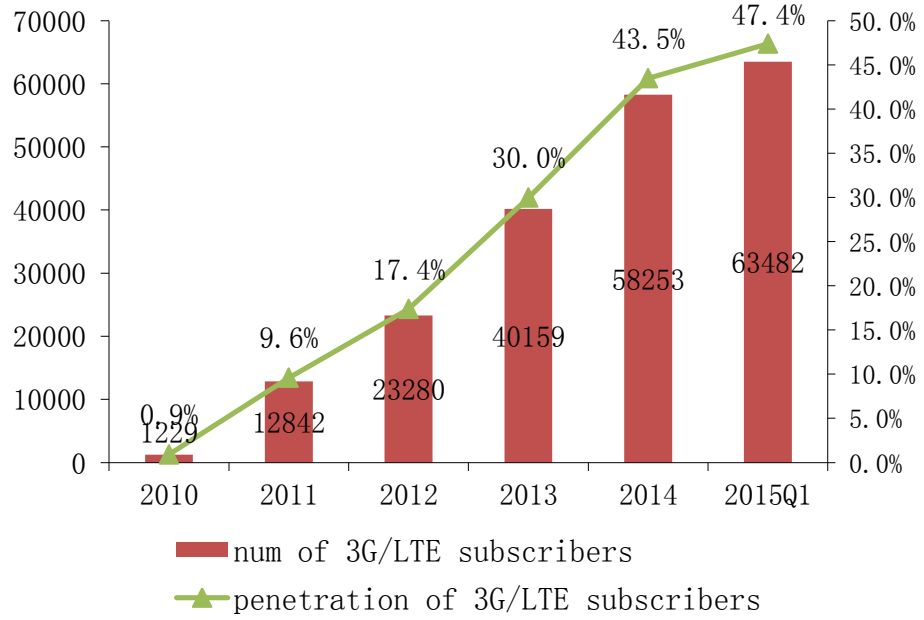
-Number of 3G and TD-LTE base stations respectively reached to 1.283 million and 733,000, accounting for 59.4% of total.



Mobile broadband—Proportion of broadband subscribers rises quickly

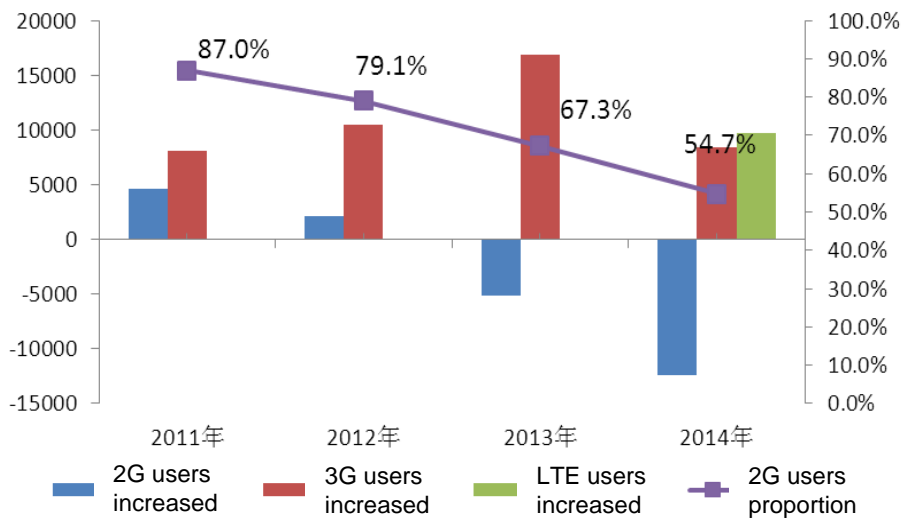
2G/3G subscribers are expediting the migration to 4G.

3G/LTE subscriber and penetration



By the end of 2014, subscribers of 3G/4G surpassed 580 million households, with the penetration rate up to 43.5%.

New increased mobile user contrast

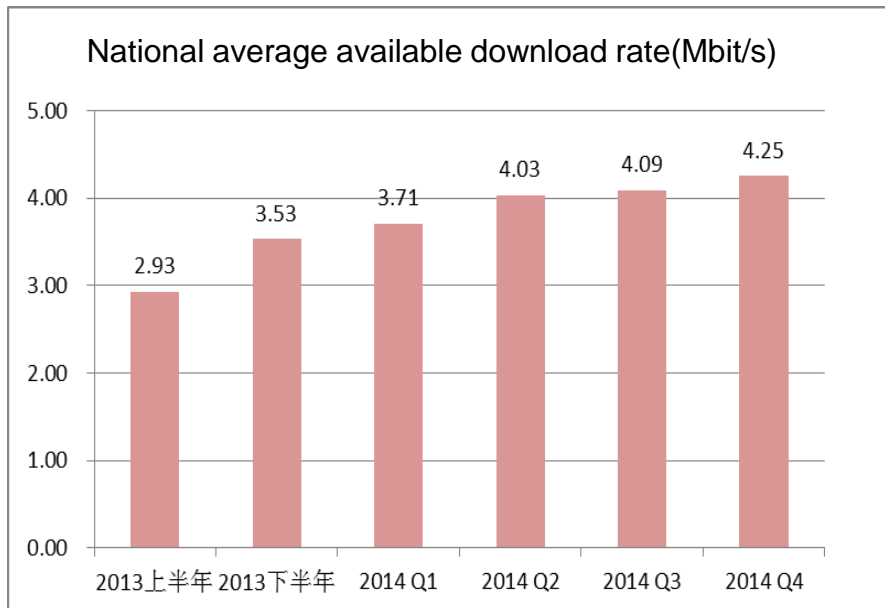


The subscribers of 2G stopped growing in 2013, a decreasing of 50 million. 3G subscribers are replacing 2G subscribers at a fairly high speed obviously. By the end of 2014, the subscribers of LTE reached to 97.28 million households.

Customer experience keeps improved

Customer experience continues to be improved

- Since 2013, the Broadband Development Alliance and a broadband speed monitoring platform have been built. The evaluation and monitoring system for broadband development has been improved gradually.
- With reference to the six “China’s Broadband Speed Report” released by the Broadband Development Alliance, available average download speed of fixed broadband reached to 4.25Mbit/s by the fourth quarter of 2014, up by 20% compared with that (3.53Mbit/s) of the second half of 2013.



Broadband development alliance was launched by telecom operators, Internet companies, communications equipment manufacturers and scientific research.

Tariff of both fixed and mobile broadband drops continuously

Price of fixed broadband access remaining a downward trend

- Based on the dynamic monitoring data released by China Academy of Telecommunication Research over the years, with the advancement of access bandwidth and actual speed available, from 2011 to 2014, average monthly fee fo fixed broadband access decreased from 51 yuan to 41 yuan, down by 20%.

Mobile Internet traffic remaining a rapid downward trend

- In light of the monitoring data released by CATR,with the promotion of average mobile access speed, from 2011 to 2014, the average fee of mobile Internet service decreased from 0.359 yuan/MB to 0.152 yuan/MB, down by 58% during the three years.
- With dramatic climbing up of 4G subscribers and under the dual role of scale effect and market competition, traffic charges will further decline.

Personal Internet applications develop prosperously

The development of personal Internet applications shows an overall upward trend

- As the largest Internet application, the usage of instant messaging keeps on going up to 90.6%.
- The development of mobile business applications bursts out . Annual growth of subscribers for mobile business applications (e.g. mobile shopping, mobile payment, mobile banking etc) far exceeds the growth rate of other mobile applications.

Application	2014		Annual growth rate
	subscriber	unilization rate	
Instant communication	58776	90.60%	10.40%
Search engine	52223	80.50%	6.70%
Network news	51894	80.00%	5.60%
Network music	47807	73.70%	5.50%
Network video	43298	66.70%	1.10%
Network game	36585	56.40%	8.20%
Network shopping	36142	55.70%	19.70%
Online payment	30431	46.90%	17.00%
Network literature	29385	45.30%	7.10%
Online bank	28214	43.50%	12.80%
Email	25178	38.80%	-2.90%
Micro-blog	24884	38.40%	-11.40%
Travel booking	22173	34.20%	22.70%
Group purchase	17267	26.60%	22.70%
Internet Banking	7849	12.10%	

Corporate Internet applications get rapid popularization

- According to the statistics of CNNIC, by the end of Dec 2014, the proportion of businesses using Internet in office was 78.7%.
- For the size of different enterprises, micro-enterprises with 7 employees or below utilize the Internet the least which is 66.4%; and enterprises with 50 employees or above utilize the Internet more which is over 80%.
- The manufacturing industry, information transmission, computer services and software industry and the wholesale and retail industry carry a higher proportion of Internet usage.
- In 2014, Internet O2O business model realized a rapid development .This model enables business entities, in local consumer services and business services intertwining with the internet. Offline business has become an important part of Internet consumer economy

List of major corporate Internet application penetration rate

Classification	Application	Popularization rate
Communication	Send and receive email	83.00%
Information	Publish information or instant messages	60.90%
	Knowledge of goods or services	67.30%
	Access to information from government agencies	51.10%
Business service	Online bank	75.90%
	Provide customer service	46.50%
Internal support	Interact with government agencies	70.60%
	Network Recruitment	53.80%
	Online staff training	26.70%
	The use of Internet application system for the operation of enterprises	20.50%

Note: data source CNNIC

The environment of broadband development improved obviously

■ Social orientation of broadband has been changed:

- ✓ Broadband was listed as public strategic infrastructure; many provinces/cities issued documents to promote the development of broadband, incorporating fiber-optic network, telecom base stations and pipeline **into local land-use plan and social & economic development plan for the first time**, setting clear the **land-use** requirements for broadband infrastructure and guaranteeing the road right for broadband construction.

■ Draw attention of the leadership:

- ✓ As broadband has become national strategy, many departments of Chinese government realize that they should make contribution to the development of broadband. Also, many provinces/cities have established trans-department broadband-developing leading group of which main leaders are in charge

■ Performance appraisal:

- ✓ Broadband development has been included in the performance assessment of the government in many provinces/cities; some provinces have even established three-level management mechanism for the development of broadband which are provincial, city and county levels.

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The introduction of the strategy: background and process

background

- 1 There is a wide gap between China and developed countries in broadband development. China falls significantly behind in broadband penetration and speed.
- 2 Urban-rural and regional gaps in broadband development are widening, severely hindering the economic development of backward regions.
- 3 The international community keeps moving further on developing broadband strategy. More than 100 countries have introduced a broadband strategy/plan.
- 4 Some deep-seated problems in broadband development emerged, which need to be addressed at the national level.
- 5 From the government to the entire society, it has become a consensus that broadband China strategy should be introduced. Since 2010, the implementation of broadband China strategy has been mentioned in many high-level meetings and major policy documents.

process



“Broadband China” strategy

国务院关于印发“宽带中国”战略及实施方案的通知
国发〔2013〕31号 8月

In Aug 2013, the State Council issued the Implementation of “Broadband China” strategy to drive all-round broadband advancement, speed up broadband construction, convergent and build safe and universal next generation national information infrastructure.



The NDRC and MIIT jointly held the first meeting of the “Broadband China” strategy on Feb 24, 2012, which officially initiated the research on “Implementation of Broadband China Strategy”

Orientation: strategic public infrastructure

● Orientation

- *Seeing broadband construction as infrastructure*
- *A major foundation for transformation of development ways, fostering strategic emerging industries and participating in international competitions*

● Strategic orientation

- *The “Broadband China” strategy will be a guideline for China’s broadband development at the current state and in the future.*

General ideas

Three considerations

Serving for national economy and social development

Treating construction of next generation information infrastructure as a goal and pushing forward collaborative development between broadband and industries

Seeing from the angle of the overall situation, planning and coordinating broadband as a whole and intensifying top design and layout

Five Principles

- **Combining government guidance with market regulation**
- **Combining overall planning with gradual development**
- **Combining network construction with application services**
- **Combining network upgrading with industrial innovation**
- **Combining broadband penetration with security**

Strategic goals(2015)

- Broadband development should be geared to social and economic development, and link up with the outline of the “Twelfth Five-Year” plan and the “Twelfth Five-Year” plan of the information and telecommunication industry.

Goals of Broadband China strategy 2015

- Build the next generation information infrastructure.
- Realize FTTH coverage in cities and villages, and achieve 50% of fixed broadband penetration, 32.5% of 3G/LTE penetration and 95% of administrative villages access to broadband.
- Broadband access capability in cities and rural areas respectively reaches to 20Mbps and 4Mbps.
- The level of broadband applications will increase significantly, with a wide range of mobile Internet penetration.

Strategic goals(2020)

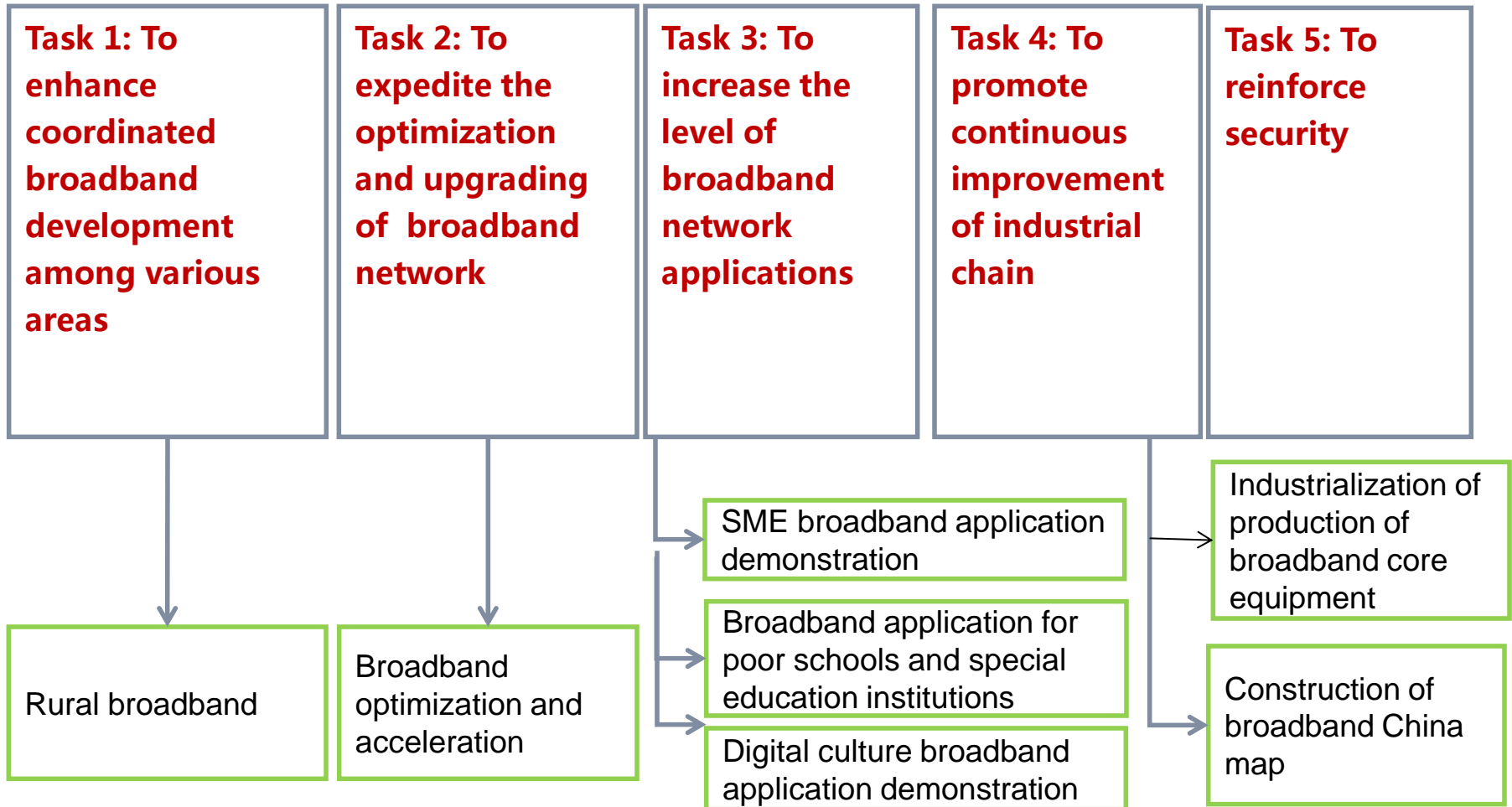
- Long-term goals of 2020 are designed by taking into account the needs of China's future development

China's long-term goals of 2020

- The gap in broadband network facilities with developed countries is narrowed significantly. People are able to fully enjoy opportunities arising from broadband.
- The penetration rate of fixed broadband and 3G/LTE reaches to 70% and 85% respectively. 98% of administrative villages have access to the broadband.
- Broadband access capability in cities and rural reaches to 50Mbps and 12Mbps respectively, and households in developed cities run up to 1Gbps.
- Broadband applications deeply incorporated into people's lives and work, and mobile Internet achieve universal penetration.

Key tasks

■ 5 key tasks and 7 major projects



Policies and measures

- **Organizing structure and leadership**
- **System environment**
- **Broadband network construction**
- **Broadband construction in western China and rural areas**
- **Resource protection and international cooperation**

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Successful experience of broadband China Strategy

- **Central government paid high attention to**
- **The effect of broadband China Strategy itself**
- **Combined effect of the following released policies and measures after the broadband China Strategy**
- **Efficient operating government and the Cooperation and support come from various Community of the whole society**
- **Perfect ICT infrastructure and hardworking people engaged in ICT field**

Central government paid high attention to

- **The publishment of “Broadband China” Strategy and its Implementation scheme**
- **The cooperation and support of other department of Chinses government for the broadband china strategy.**
- **The implementation of following released policies and measures after the publishment of broadband China Strategy**

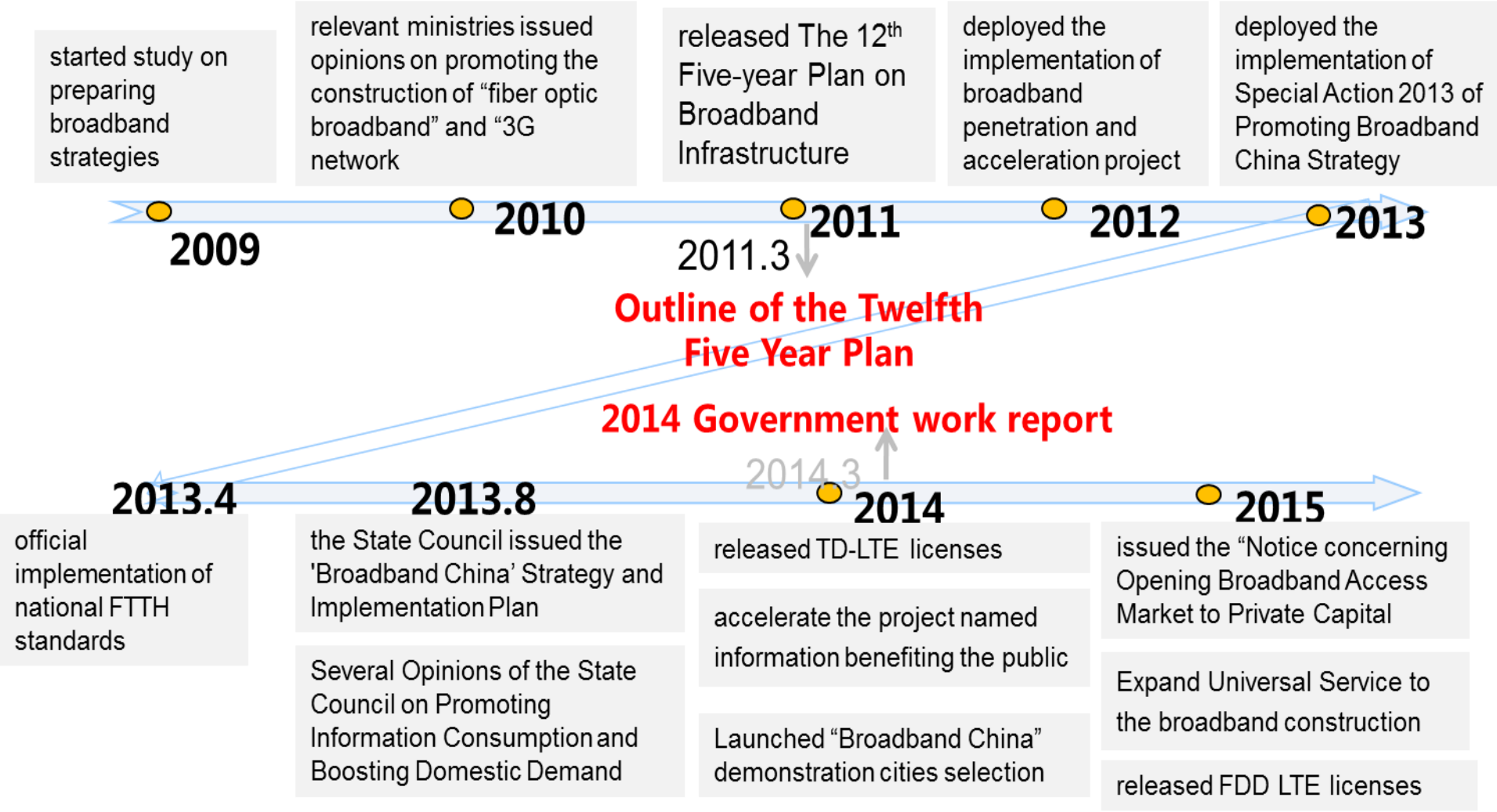
The effect of broadband China Strategy itself

- **The analysis of the problems in the broadband development of China is incisive and accurate.**
- **The object of Broadband China Strategy is practical and feasible, especially suitable for the developing practice of China.**
- **The tasks, policies and measures put forward by the Broadband China Strategy targeted well and really can solve many problem in the broadband development of China.**

Combined effect of the following released policies and measures after the broadband China Strategy

- **“Several Opinions of the State Council on Promoting Information Consumption and expanding Domestic Demand”**
- **Code of practice for the design and acceptance check for the FTTH engineering project**
- **Notice for related work about accelerating the implementation of project named information benefiting the public**
- **Began the appraisal and election of creating “Broadband China” demonstration cities (city cluster)**
- **announced the open-up of broadband access service to private capital**
- **Expanded the scope of Universal Service including the broadband construction in rural areas**

Important measures to promote rapid development of broadband



Vigorously promote information consumption

In August 2013, the State Council issued "Several Opinions of the State Council on Promoting Information Consumption and Boosting Domestic Demand", which has taken consumption as the supporting point and policy as the lever to launch a new round of ICT development, boost economic growth and transform economic growth mode.



国务院关于促进信息消费扩大内需的若干意见

国发〔2013〕32号 8月14日



Consumption

Intelligent terminal, smart home appliances, notebook, Internet of things, etc.
Communications, Internet access and content services
Software application service



Supply

Broadband network: backbone, access network, application facilities
Software development, Internet application development
Information security



Published national FTTH standards

On December 25, 2012, two national standards – “Code for Design of Communications Engineering for Fiber-to-the-Home in Residential Districts and Residential Buildings” and “Code for Construction and Acceptance of Communications Engineering for Fiber-to-the-Home in Residential Districts and Residential Buildings” were issued, which were officially implemented nationwide on April 1, 2013.



住房和城乡建设部 工业和信息化部关于贯彻落实光纤到户国家标准的通知

各省、自治区、直辖市住房城乡建设厅（建委、建交委）、通信管理局，有关单位：

为全面贯彻《国民经济和社会发展第十二个五年规划纲要》、《“十二五”国家战略性新兴产业发展规划》以及国务院关于加快宽带中国建设的要求，加快推进光纤到户建设，充分发挥光纤宽带网络在经济社会发展中的战略性、基础性作用，全面提升国家信息化水平，住房城乡建设部发布了《住宅区和住宅建筑内光纤到户通信设施工程设计规范》及《住宅区和住宅建筑内光纤到户通信设施工程施工及验收规范》两项国家标准（以下简称光纤到户国家标准），现就贯彻落实标准有关要求通知如下：

The issuance and implementation of these two national FTTH standards provide technical foundation and construction basis for FTTH projects in residential districts and buildings, which are the important basis for solving the difficulties in residential broadband construction, push forward the full realization of FTTH for residential buildings as well as promote the co-construction and sharing of communications facilities in residential communities, and of great importance for implementing the “Broadband China” project.

Universal service: Support for rural broadband development

Expanded the scope of Universal Service

- Based on the original objective of "Telephone and Internet Access reaching Every Village and Township", telephone service reaching every natural village, broadband access reaching every administrative village and rural information service were included into the scope of Universal Service.

The third stage

The forth stage

2010

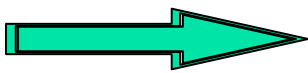


80% of administrative villages nationwide were connected with broadband

Fiber will be extended to towns, and all administrative villages will be covered with broadband. The project of "Extending Information Service to Villages" will be carried out in full swing to promote the penetration of information terminals to villages and households. Comprehensive information service platform related to agriculture production, sales of agricultural products and rural social security will be built

2015

the proportion will be increased to 95%, and the broadband access capability will reach 4M



Government financial support will be increased in the fourth phase, and rural e-commerce will be developed through the Village Access Project and capacity building

2020

98% of administrative villages will be covered with broadband, and the access capability will reach 12M

Efficient operating government and the Cooperation and support come from various Community of the whole society

- **The release of all the about-mentioned following policies and measures are the efficient work of different department of Chinese government**
- **The open-up of the national superhighway pipeline systems**
- **The open-up of the roof of governmental offices**
- **Incorporating the information infrastructure construction into Municipal Development Master Planning**

Perfect ICT infrastructure and hardworking people engaged in ICT field

- **Perfect national optical fiber backbone network**
- **The implementation of copper backward and optical forward project and the layout of optical fiber access backbone network**
- **The fast built 3G/LTE network and rapid growth of broadband network subscribers**
- **Best telecommunications equipment manufactures in the world**
- **The rapid growing Internet enterprises like BAT**
- **Competent, efficient and diligent people engaged in ICT field**

Thank you
謝謝