The Development of China's Broadband Network

Ministry of Industry and Information Technology, China

Nov 20, 2012

Agenda

1 Overview of China's Broadband Network

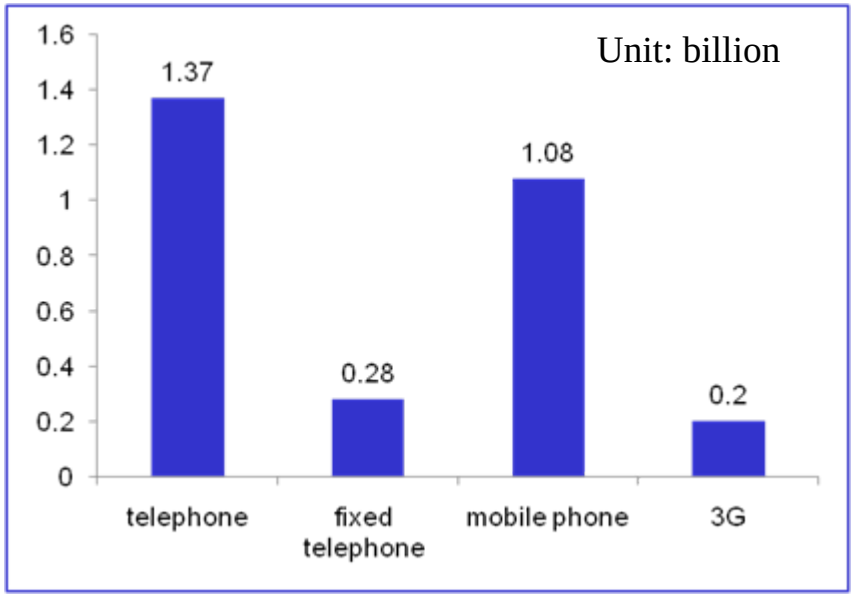
- Broadband Subscriber and User
- Broadband Network
- Village Engineering
- "Broadband China" Strategy

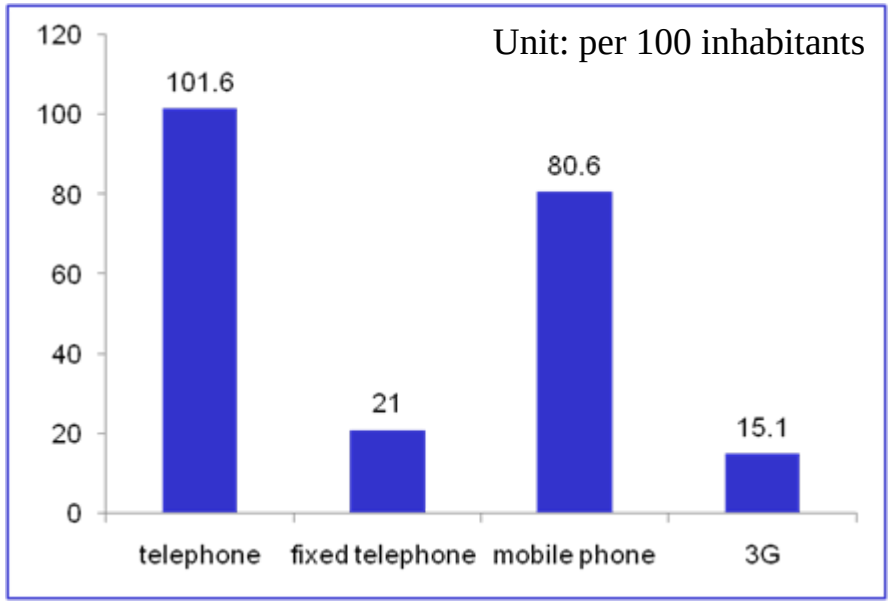
2 China's Engagement in Regional Information Super Highway

3 About Building Regional Connectivity

Telephone Subscriber

By Sep. 2012, the total number of telephone subscribers and the subscribers per 100 inhabitants in China:



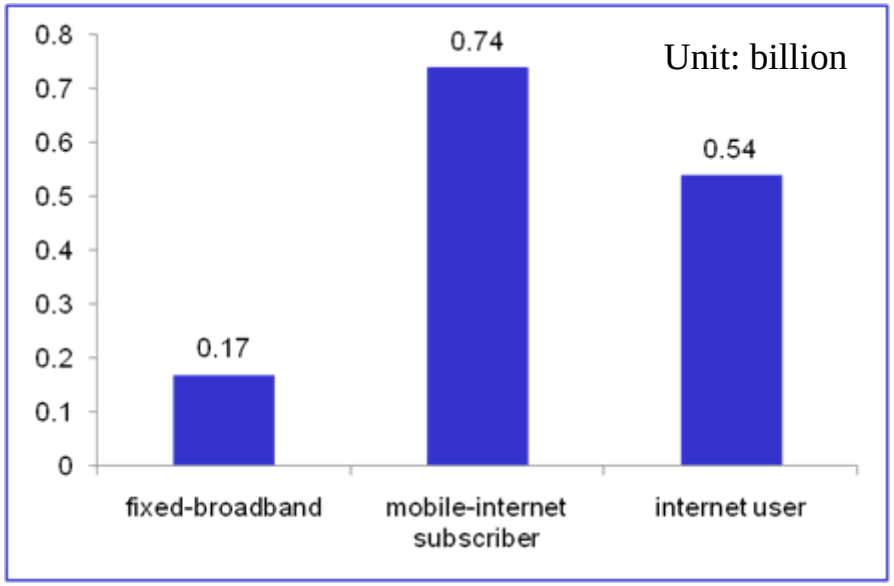


- The total number of telephone subscribers is 1.37 billion, in which mobile subscriber accounts for 78.8%.
- 3G subscriber is increasing rapidly, amounting to 0.2 billion.

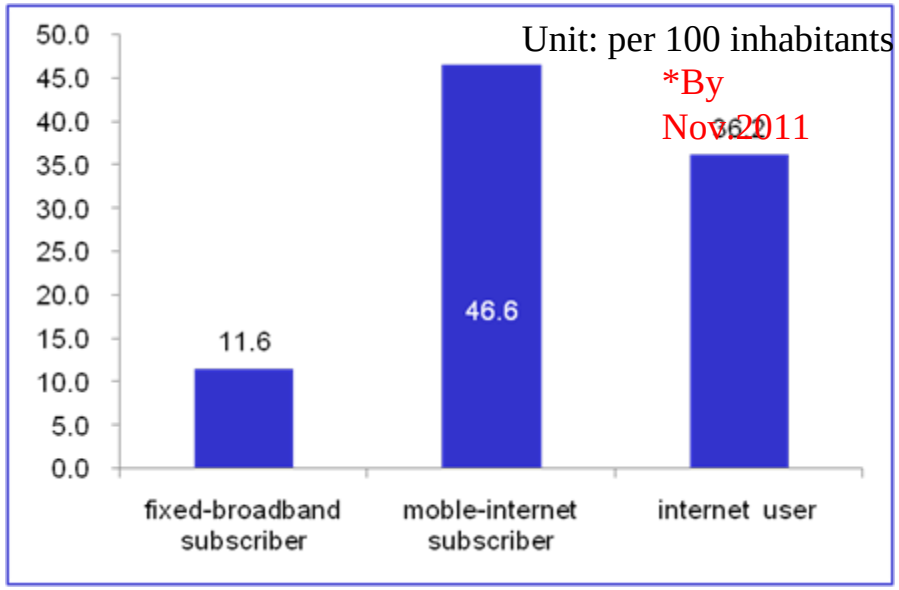
- Telephone penetration rate is about 101.6 subscribers per 100 inhabitants.
  - Cell phone: 80.6 per 100 inhabitants.
  - 3G: 15.1 per 100 inhabitants
  - In sum, it is medium level

Internet Subscriber and User

The total number of broadband subscribers and internet users



The penetration rate of the broadband subscribers and internet users



- The total number of fixed-broadband subscribers is 0.17 billion
- The mobile-internet subscriber reaches 0.74 billion.
- Internet user is 0.54 billion.

- Subscriber penetration rate
  - Fixed-broadband is 11.6 per 100 inhabitants; mobile-internet is 46.6 per 100 inhabitants. Mobile is far more than fixed-broadband
  - Internet user: 36.2 per 100 inhabitants

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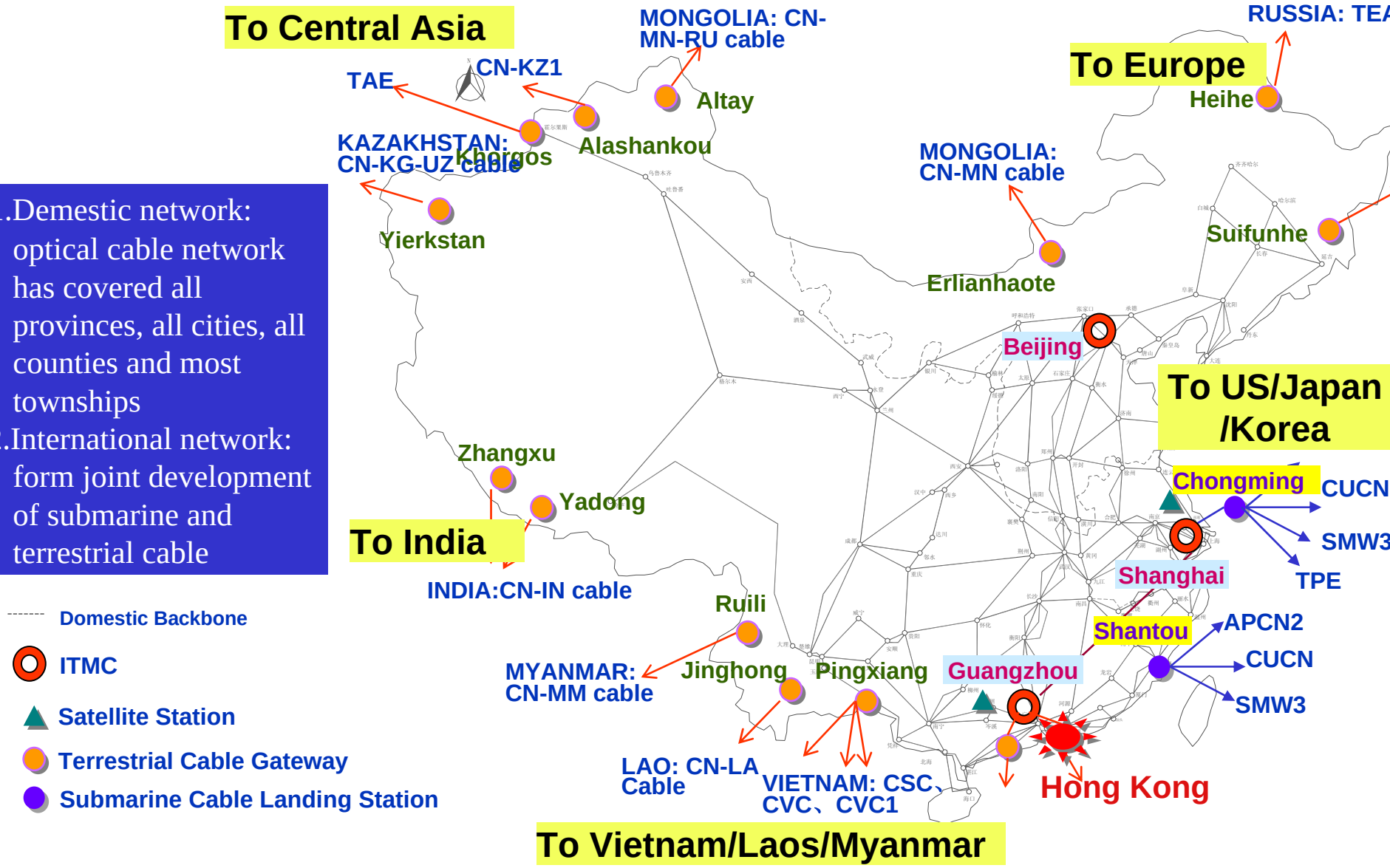
Broadband Backbone Network

1.Demestic network: optical cable network has covered all provinces, all cities, all counties and most townships
2.International network: form joint development of submarine and terrestrial cable



International Communications Network

International submarine cables and international cross-border land cables of China could reach directly to 60 countries, and have the capacity of 6.76Tbps.

Cross-border land cables：

- Cross-border land cable system towards 14 directions has been established with 9 countries among 14 land neighbors；
- The total capacity of land cable system exceeds 5.0Tbps ；

Submarine cables：

- 4 submarine cable landing points：Chongming in Shanghai, Nanhui in Shanghai , Qingdao and Shantou.
- 7 landed submarine cables：APCN2, SMW-3, TPE, CUCN, FLAG, EAC and C2C
- The total capacity of submarine cable system owned by Chinese enterprises reached 1.76Tbps.

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Introduction of Village Engineering

Village Engineering

In 2004, Village Engineering was initiated by MII (the predecessor of MIIT) .Its goal is to push telecommunication network to cover every administrative village and is to enable the countryside residents to have condition to enjoy telecommunication services.

The content of Village Engineering has been changing since initiation. It has gone through three stages:

1st stage	2004-2005	Enable more than 95% of administrative villages nationwide to get access to telecommunication network	achieved
2nd stage	2006-2010	By the end of the year 2010, all the administrative villages get access to telecommunication network, and all the townships get access to Internet. Villages Engineering begins to cover natural villages (villages with more than 20 households). Another mission is to build countryside information service platforms and develop information resources for rural areas.	achieved
3rd stage	2011-2015	Village Engineering extends universal telecommunication service from administrative villages to natural villages, and expands services from voice to Internet. By the end of the year 2015, all the administrative villages will get access to Internet.	In progress

Introduction of Village Engineering

1.Network construction

Village Engineering divided the whole country into several sub-areas , network construction in every sub-area is assigned to a specified carrier.

2.Construction funds

To date, total construction fund has exceeded 50 billion. One minor part is invested by central and local government, another major part is invested by telecommunication enterprises.

3.Technology

According to the geographic condition, the appropriate technology will be chosen. It could be in any of optical cable, satellite and wireless, but optical cable is the first one of the list.

By Nov 2011, all the administrative villages and 94.5% of the natural villages have gotten access to telecommunication network, 99.7% of the townships have gotten access to broadband network, all the townships and 95% of the administrative villages have gotten access to Internet.

Village Engineering has improved significantly the capacity of network infrastructure in rural area, bridged the digital divide between city and village, and promoted social and economic development with informatization.

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Introduction of “Broadband China” Strategy

“Broadband China” Strategy

“Broadband China” strategy is the focus of development in the next five years. The primary content is as follows :

- Widening the coverage of broadband network and improve Internet penetration rate
- Pushing FTTH technology widely applied
- Enhancing the speed of the network
- Bridging the gap between urban and rural areas

Goal: by the end of 2015,

- Fixed broadband subscribers: exceed 0.27billion
- Broadband Penetration:
  - ✓ Urban household:65%
  - ✓ Rural household: 35%
- 3G subscribers: exceed 0.45billion
- Internet access speed:
  - ✓ Urban household:20Mbps
  - ✓ Rural household: at least 4Mbps

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Overview of GMS IS

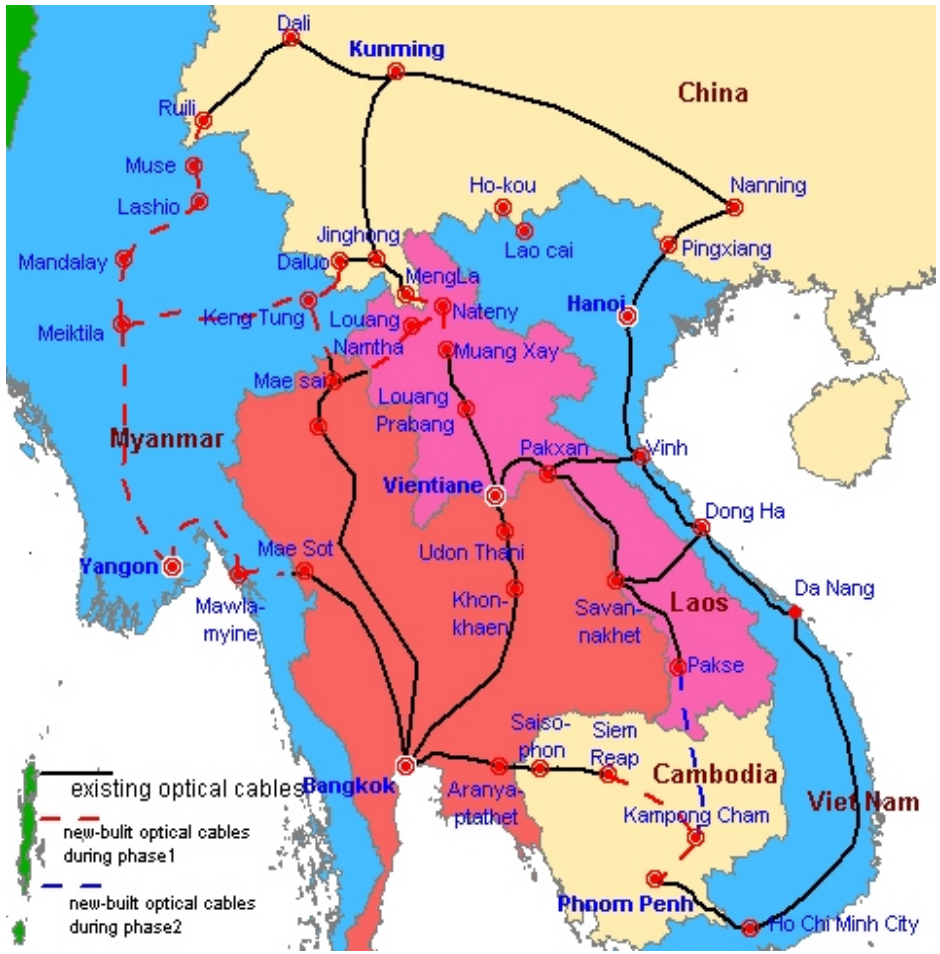
In November 2004, during Summit between ASEAN, China, Japan and South Korea(10+3), information and communications authorities of six GMS countries signed the MoU on GMS IS.

Phase I :

- Cross-border cables linking neighboring countries are connected to make interconnectivity possible ;
- Domestic backbone cable systems are built in some countries ;

Phase II:

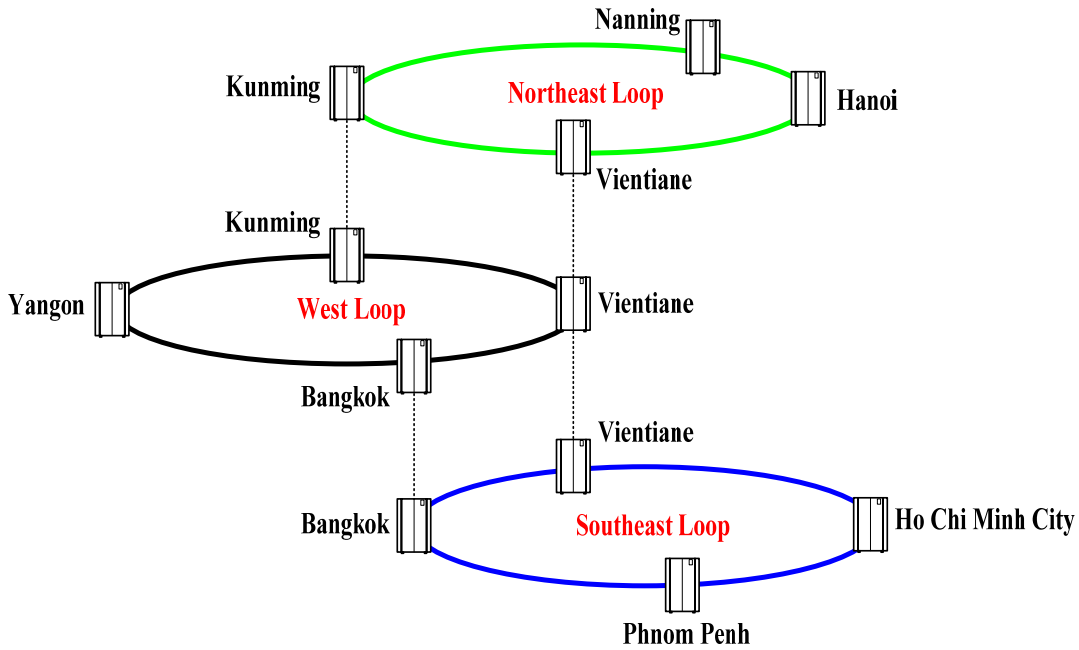
- Transnational loop network structure is built ;
- Unified operation and management is conducted.



Overview of GMS IS

The construction of GMS IS went on smoothly. The Phase I project was complete in March 2008, and the completion ceremony was held in the 3rd GMS Summit.

The final network structure of GMS IS



On December 20th, 2011, during the fourth leaders' meeting on economic cooperation of the Greater Mekong Subregion, the MIIT of China and representatives of the other five parties of the GMS signed the Memorandum of Understanding on the joint cooperation in further accelerating the construction of Information superhighway and its application in GMS.

Achievements of GMS IS

The completion of GMS IS first-stage construction marks that initial results have been achieved in the project. Through this project, we not only strengthened the effective connection between communications networks of these countries but also made achievements beyond the network.

- Strengthened the Physical Connection and Promoted the Economic and Trade Development of GMS countries
- Increased Benefits of Enterprises and Facilitated Relevant Cooperation
- Overcame the bottleneck of the development and laid foundations for the development
- Established the Communication Mechanism and Strengthened Mutual Trust

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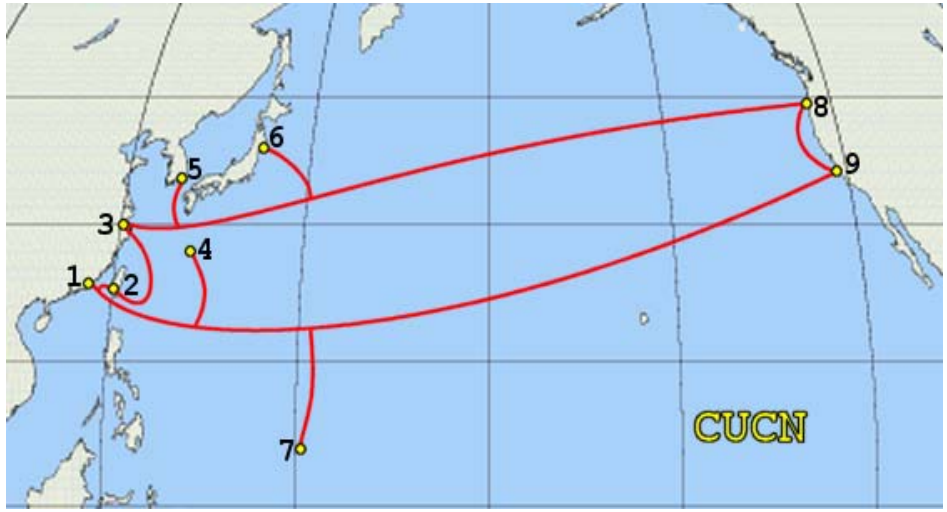
Connectivity between China and USA

There are two direct passages between China and US.

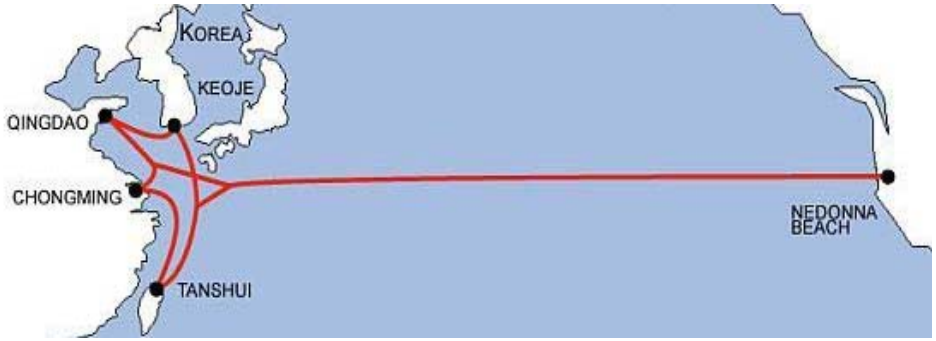
CUCN (China-US Cable Network)

- The first submarine cable system with direct cable routes linking the U.S. and China reaching several countries in the Asia-Pacific region.
- The cable system was planned in 1997 and put into service in early 2000.
- System capacity: 80Gbps



TPE(Trans-Pacific Express Cable System)

- The second subsea cable system directly linking China and USA.
- The cable system completed in September 30, 2008.
- System capacity: 1.28Tbps



Connectivity between China and Euro

China has formed the carrying mode of combination of land cable and submarine cable in the direction of Asia-Euro. Land passage has 7 routes and has the capacity of 185Gbps, while submarine passage has 3 routes and has the capacity of 9.2G.

Land Passage

No	Route	Gateway
1	China-Mongolia-Russia-Euro	Erlianhaote
2	China-Russia-Euro	Heihe
3	China-Russia-Euro	Suifenhe
4	China-Russia-Euro	Manzhouli
5	China-Russia-Euro	Fuyuan
6	China-Kazakhstan-Russia-Euro	Huoerguosi
7	China-Kazakhstan-Russia-Euro	Alashankou

Submarine Passage

No	Cable	Landing point
1	FEA	Nanhui
2	SMW3	Chongming and Shantou
3	APCN2+SMW4	-

China’s Attitudes towards TASIM

- Building regional connectivity, including Trans-Eurasian Information Super Highway(TASIM) Project, will further promote the trade in the region and between Asia-Pacific and Euro, and have positive influence and strategic significance.
- China supports Chinese enterprises, including telecom operators and manufacturing enterprises, to take part in the regional cooperation, and suggests the countries in the region to urge their operators to conduct study and communications on the deployment of cross-border network , to promote the building of the broadband information space in Asia-Pacific.

Thank You !