

## 伍、相關附件

附件一：CRC 介紹蒙古 ICT 發展之影像摘要





### Initiation: Start of Communication

- 1921 Telephony agency "MONTA" of the Temporary Government of Mongolia was established.
- 1924 The first post stamp was issued.
- 1934 First radio broadcasting was started
- 1937 "Communication college" was established.
- 1939 The first 200 line telephone exchange put into operation
- 1944 Ministry of Communication was established.
- 1950 The copper openwork line between Ulaanbaatar and Arkhangai was built.

## Initiation: Start of Communication

- 1960 The telecommunication service center building was built in Ulaanbaatar.

## First Growth: Installing Telecommunication

- 1969 Research and Industrial Product Institute for Telecommunication was founded.
- 1970 The first earth station for receiving the TV signals was put into operation.
- 1975 Minsk-32, the first mainframe computer in Mongolia, Central Statistical Authority
- 1976 FM Broadcasting started. Installation of high band microwave link started.
- 1982 International Computer Communication was established with the computer of the USSR VINITI Center.

## First Growth: Installing Telecommunication

- 1989 All aimags except of 4, were connected with Ulaanbaatar by analog microwave network.
- 1990 Ministry of Communication was reorganized into Mongolian Telecommunication
- 1991 Satellite Earth Station was installed in Ulaanbaatar to establish the international telecom services.
- 1992 Mongolian Telecommunication company was established on the basis of MTA.

## Second Growth: Digitalized Telecommunication

- 1995 Mongolian Railway Company finished installation of digital telephone switches for 3,000 subscribers in some cities alongside the railway.
- 1996 The Mobicom Company started its GSM mobile services. Post and Telecommunication Authority (PTA) was founded
- 1997 A 900 km long new digital switch was installed to replace the northern and western analog microwaves
- 1998 4 aimag centers and 4 biggest soum centers which had no access to trunk line of microwave link were linked via VSAT system.

## Second Growth: Digitalized Telecommunication

- 2000 Skytel started its cellular service in Ulaanbaatar.
- 2001 The amended Communications Law was adopted.
- 2002 Communications Regulatory Commission established. East Mongolian Optical Fiber backbone link started its operation.
- 2004 Information and Communications Technology Authority was established.

## Latest Growth: ICT development

- 2005 E-Mongolia National program: a blue-print and roadmap for ICT development.
- 2005 Unitel started its cellular services of GSM system.
- 2006 G-Mobile started its cellular services of CDMA system. MISPA and Netcom were established.
- 2007 MOSA and Skynetcom were established.
- 2008 Approved "Unified Registration and information system national program and Master plan to develop outsourcing.

## Latest Growth: ICT development

2008 ICTA has been restructured into ICTPA.

2009 Established National Data Center.

- 
- To develop competition in the sector
  - To localize latest technologies
  - To update legal and regulative environment
  - To expand the infrastructure.

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- universal computerization
  - national data and information center
  - reduction of service prices and tariffs
  - improved infrastructure
  - increased network capacity
  - access to information and communications services in rural and local areas
  - transmitting different television channels in local areas

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- **Information Communications Technology and Post Authority of Mongolia**
  - **Communication Regulatory Commission of Mongolia**

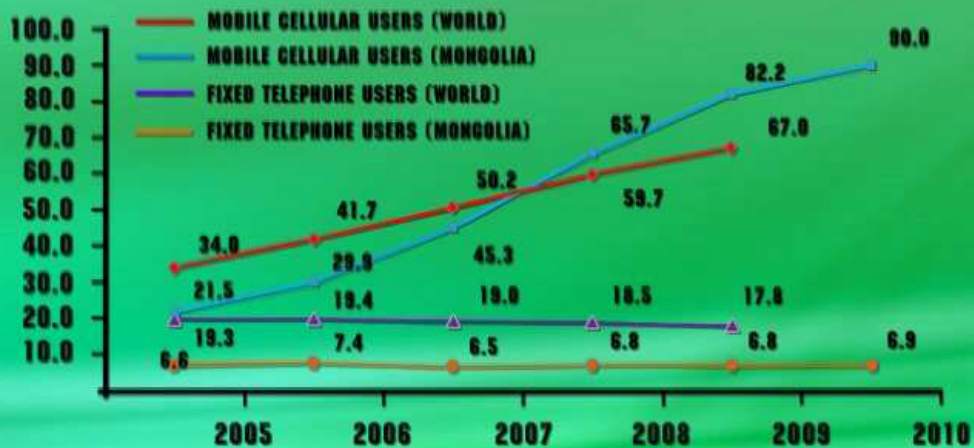
## Монгол Улсын шилэн кабелийн сүлжээний өнөөгийн байдал, хэтийн төлөв



2009-2011 хэрэгжих төсөл

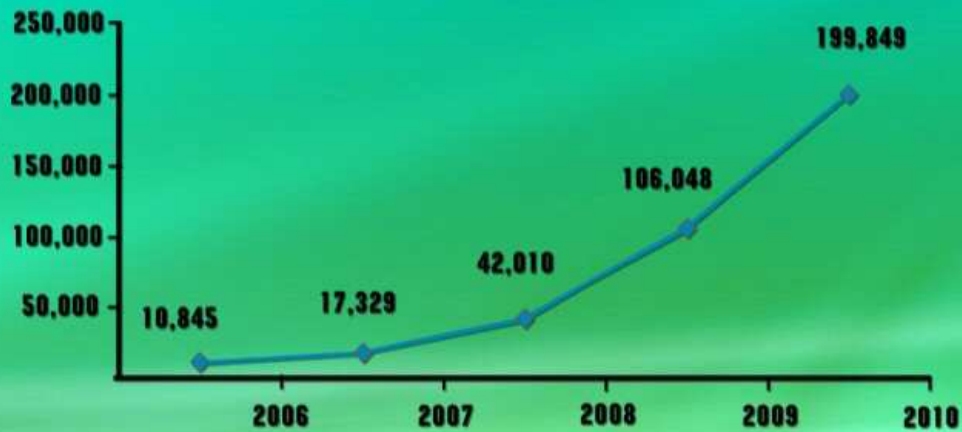
- |  |  |  |   |
|--|--|--|---|
|  | Айгуйн тусалдаг шилээр суурилогдах DWDM шилэн кабелийн дамжуулах төлөв           |  | MXC-XXX-ийн шилэн кабелийн сүлжээ       |
|  | Айгуйн тусалдаг шилээр суурилогдах STM 16, STM 64 шилэн кабелийн дамжуулах төлөв |  | MTS-ийн шилэн кабелийн сүлжээ           |
|  | Сумал тусалдаг шилээр суурилогдах STM 1, STM 4 шилэн кабелийн дамжуулах төлөв    |  | Мобиком компанийн шилэн кабелийн сүлжээ |
|  | Шилээр суурилогдах OLA шилэн кабелийн өсгөч төлөв                                |  | Ж-ийн компанийн шилэн кабелийн сүлжээ   |
|  | Шилээр суурилогдах шилэн кабелийн төлөв  |  |   |

## MOBILE AND FIXED INDICATORS

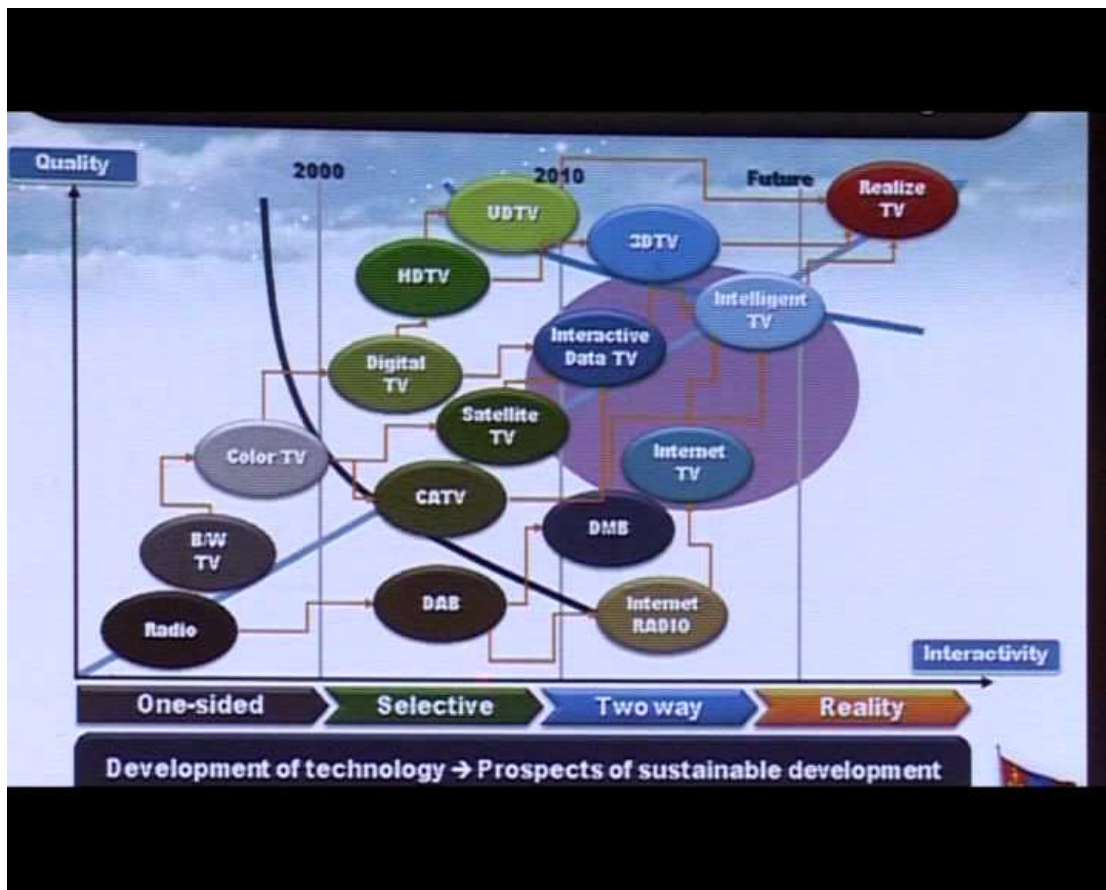




## INTERNET SUBSCRIBERS



- Universal Postal Union
- International Telecommunications Union
- Asia Pacific Telecommunication
- Asia Pacific Postal Union Bureau
- Asia Pacific Broadcasting Union
- Asia Pacific Space Cooperation Organization
- International Telecommunications Satellite Organization
- Asia Pacific Satellite Communication



- World Bank
- Asian Development Bank
- European Bank for Reconstruction and Development
- Asian Foundation
- Korea International Cooperation Agency
- Japan International Cooperation Agency
- United States Agency for International Development
- International Development Research Center of Canada
- International Finance Corporations
- Embassies and Diplomatic Corpus

## Ongoing projects

- National program on registration integrated system
- Project to build up high-speed Internet network connecting all soums, urban areas, province (aimag) centers and the capital city
- "Distance learning", "E-diagnosis and treatment
- E-content development system
- Project to place mailing boxes in every household
- Information and Communications Infrastructure Development project

These projects and programs allows information and communications technologies deeply penetrate into lives of people, become their daily consumption, and there is no doubt that the level of development in our country will sharply improve.

### Future projects:

The Government of Mongolia is now working on development of "National satellite for communications", "Information technology training and industrial campus", "Introduction of digital radio and television broadcasting services" and other programs and projects are being developed for deployment throughout the country. The big development project on extending high-speed fiber optic network to cover whole country will be continued this year.

In order to provide favorable environment to support e-services, to make different outsourcing businesses as real works, increasing information, communications, postal and Internet services to rural part of Mongolia, to use public-private partnership approach is becoming essential requirement.

We need to develop Information society based on development of ICT sector, to begin development of knowledge based economy. The directions were given to initiate and establish Silicon Valley of Mongolia and connect it with project to establish a campus of universities. It is important to realize that everyone's participation and initiatives are important in this. This will fasten the development of not only the sector, but also whole Mongolia.

This year, dedicated to the 90th anniversary of ICT sector, we are organizing national and international events in Mongolia:

- National ICT Policy Forum: May 25-26
- ICT 90- EXPO: May 27-30
- ITU Regional Forum on Designing a Mechanism for Cooperation in Emergency Communications: July 6-11
- APPU Executive Council meeting : July 25-29
- APT Wireless Forum: September

On behalf of the Government of Mongolia,  
ICTPA and CRC are open to cooperate  
with international and donor organizations  
to develop and implement programs,  
projects and activities, to enable  
development of ICT sector of Mongolia  
and foster socio-economic  
development of Mongolia

2011 year

附件二：「NATIONAL COMMUNICATIONS COMMISSION AUGUST 15, 2011」之簡報稿



NATIONAL COMMUNICATIONS COMMISSION  
AUGUST 15, 2011



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- Chap II** • Market Status
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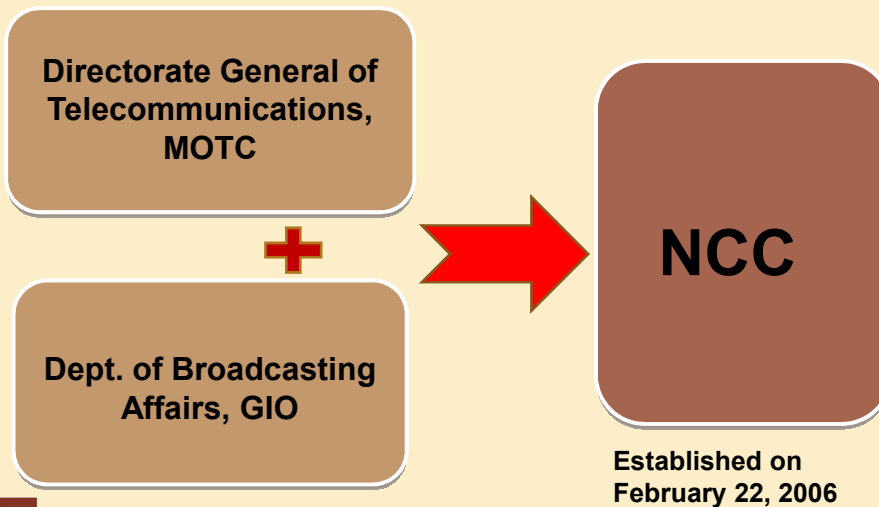
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# NCC Introduction



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## 01. HISTORY



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## 02. LEGAL GROUND (1/2)

Foundation of Establishment

### Fundamental Communications Act

Policy Goals

- Independent regulatory agency to regulate broadcasting and communications industry in accordance with convergence
- Promote the sound development of communications
- Safeguard the rights of the public
- Protect consumers' interests
- Develop multicultural diversity



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## 03. LEGAL GROUND (2/2)

Main Business Areas

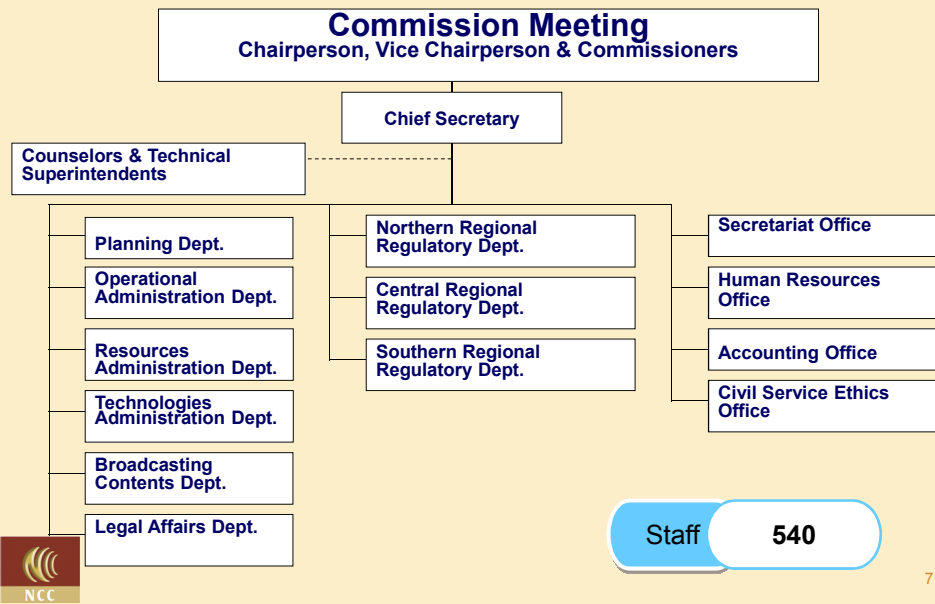
### NCC Organization Act

- Policies, Acts & Regulations
- Certificates & Licenses
- Communications Systems & Equipment Inspection
- Technical Engineering Specification & Security Standards
- Content Rating System
- Communications Resources Management
- Market Competition Promotion
- Major Disputes Settlement & Consumer Protection
- International Cooperation

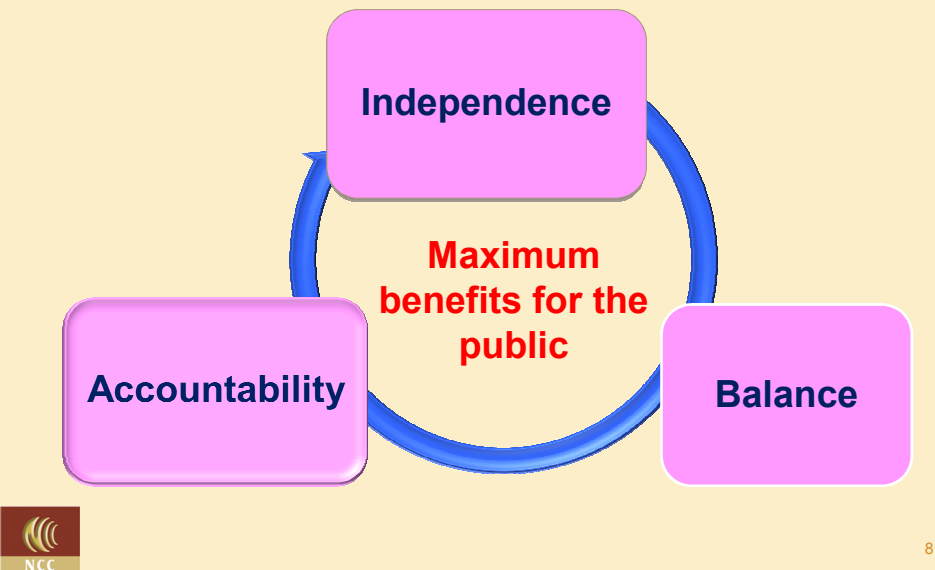


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## 04. ORGANIZATION



## 05. FUNDAMENTAL BELIEFS



## 06. BUSINESS AREAS (1/2)

### Public Interests

- Support the TV programs rating mechanism and participation of citizen groups in media content
- Clamp down on pirate radio stations
- Promote legislation of the anti-spam act
- Promote online safety for children
- Review telecoms tariffs



### Universal Service

- Promote broadband for rural villages and tribes
- Support the reduction of cell phone charges to public service hotlines
- Promote the terrestrial digital TV switchover by Dec. 2012 and subsidies for set-top-box for low-income families

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## 06. BUSINESS AREAS (2/2)

### Industry Regulation

- Promote fair market competition, inter-connection, reasonable access costs, etc.
- Manage frequency



### Convergence

- Regulation framework amendments (3TV acts and telecom act)
- Promote CATV digitization

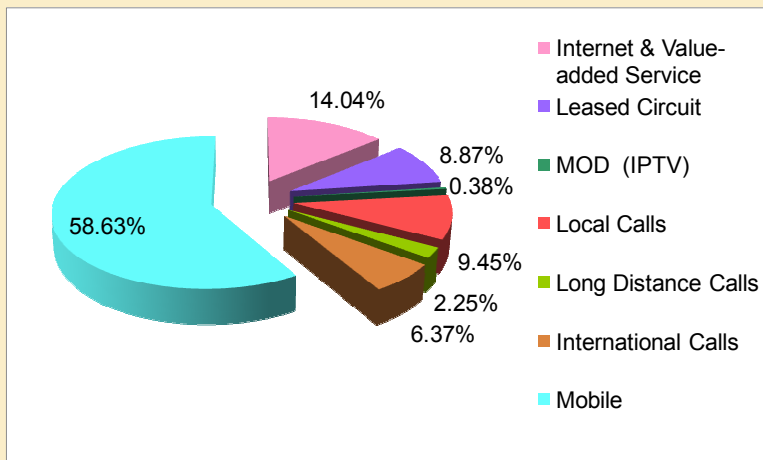
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# Market Status



## 01. MARKET STATUS: TELECOM (1/3)

◆ Percentage of telecommunication services revenue in 2010



Note: Total revenue of telecommunication services in 2010 was **US\$11.7billion**  
Source : NCC

## 01. MARKET STATUS: TELECOM (2/3)

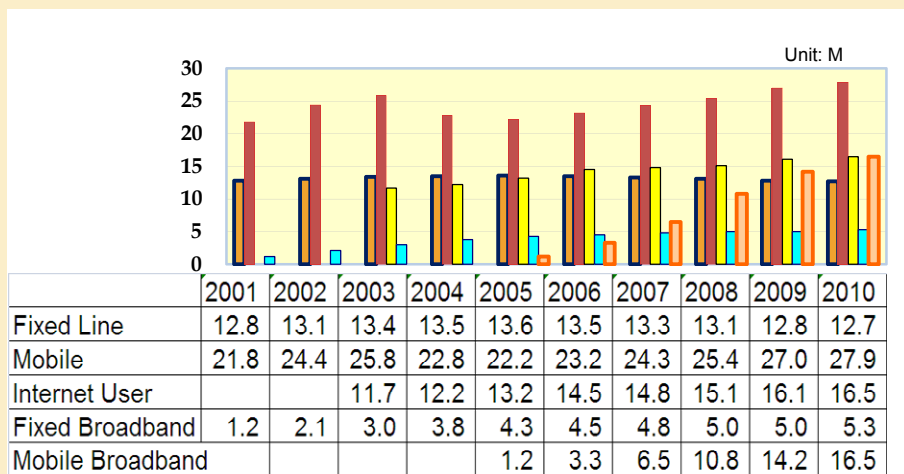
Type	Category	No. of Licenses	Total	No. of Operators
I	Fixed Network	72	104	85
	Mobile Network	26		
	Satellite Communications	6		
II	Voice Simple Resale	67	823	475
	Non-E.164 Internet Telephony	63		
	E.164 Internet Telephony	2		
	Circuit Resale	197		
	Intra-Corporation Network	31		
	ISP	181		
	Others	282		



Source: 2010, NCC

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## 01. MARKET STATUS: TELECOM (3/3)



**Subscribers of Telecom Service**

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## 01. MARKET STATUS: MEDIA (1/2)

Type	No. of Operators	Revenue (USD)
Radio	171	90.9M
Terrestrial TV	5	377.6M
Satellite Broadcasting Business	82	677.8M
Foreign Satellite Broadcasting Business	30	51.7M
CATV	59	1,081.3M

\*Satellite Channels: 268

\*Source: 2010 Overview of Broadcasting in Taiwan, NCC



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## 01. MARKET STATUS: MEDIA (2/2)

### CATV Market

Operating	Business Zones	51
	Operators	59
	2010 Revenue	USD1081.3M
Subscription	No. Household	5,084,491
	Penetration	64.06%
STB Subscription	No. Household	391,462
	Penetration	7.70%
Digital Pay Channel Subscribers		276,984



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# Major Initiatives & Policies



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### I. PROMOTE DIGITIZATION OF TERRESTRIAL TV(1/3)

- Accelerate the installation of digital TV gap fillers in order to increase the coverage of digital TV broadcasting
  - 6 completed in 2010
  - 34 completed in 2011
  - 9 completed in 2012
  
- Increase the coverage of HD TV transmissions
  - Help Taiwan Public Television Service gain the HDTV license and increase the coverage of broadcasting. Goals: **85%** of the population in 2011 and **92.85%** in 2012
  - Assist existing (1<sup>st</sup> phase) digital TV operators (having constructed the first single frequency network) to broadcast HDTV
  - Accelerate the issuing of 2<sup>nd</sup> phase digital TV licenses (the second single frequency network)



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## I. PROMOTE DIGITIZATION OF TERRESTRIAL TV (2/3)

- Provide subsidies for low-income families and improve reception
  - 85,000 families in 2011
  - 35,000 families in 2012
- Rationalize the price of digital TV set-top box so as to increase the willingness of purchase.



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## I. PROMOTE DIGITIZATION OF TERRESTRIAL TV (3/3)

- Vitalize HDTV program production and broadcast services through regulatory mechanism
  - Adjust policy on broadcast advertising in accordance with international trends.
  - Encourage TV operators to broadcast high quality local programs as well as HD programs, when they are applying for evaluation and change of license.
  - Request broadcasters to increase the ratio of HD programs in prime time every day.
  - Require the applicants to provide HD channels when planning the 2nd phase license approval of digital terrestrial TV.
  - Define rebroadcast, premier, and new releases in order to increase broadcasters' motivation of HD program production.
- Recover analogue TV channels and complete the transition by 2012



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## II. PROMOTE DIGITIZATION OF CABLE TV

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- Goal: 50% of households access digital cable TV by 2015 – set by the Executive Yuan’s “Digital Convergence Policy Initiative”
  
- Short-term strategies
  - Announce the “Administrative Digitization Project of Cable TV in the Experimental Areas” to encourage broadcasters to gradually implement digital switchover systems.
  - Adjust operating areas, announce acceptance of application, and introduce digitization according to Article 22 and 32 of the Cable & Broadcasting Act
- Mid- and long-term strategies
  - Gradually remove barriers for CATV operations across geographic areas and achieve the goal of 50% of households in Taiwan access digital cable TV by 2015
  - Complete amendments to the Cable Radio & Television Act, encourage the innovative convergence services, introduce new market players, based on the minimal operating areas in municipality/city/county

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## III. DIGITAL CONVERGENCE DEVELOPMENT POLICIES

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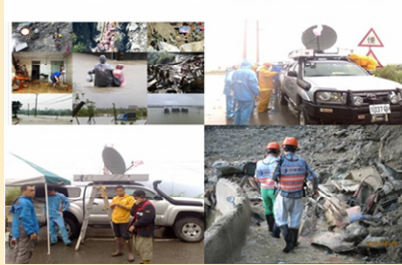
- Two-stage regulatory revision
  - Stage I: Remove barriers to allow cross-sector operations
  - Stage II: Develop layered horizontal regulatory framework
- Strategies
  - Establish a fair and sound environment for industrial development by ruling out market entry barriers
  - Accord with the governments’ industrial policies with forward-looking policy for scarce resources
  - Promote economic and industrial developments by continually ruling out convergence impediments

## IV. DISASTER PREVENTION ACTION OF COMMUNICATIONS INDUSTRY

1. Advise telecommunication operators to hold disaster prevention drills on a regular basis



2. Actively participate in disaster recovery/mitigation when accidents happen



3. Build highly reliable disaster-resistant communication systems to ensure that the communication between suburban residents and outside is unobstructed.

Illustration showing the installation of disaster proof communication platform in Kaohsiung Area



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## V. UNIVERSAL SERVICE

● Achievements of “Broadband in Every Village” and “Broadband in Every Tribe” Projects

Year	Chunghwa Telecom	Taiwan Fixed Network	Chungtuo Digital TV	New Century InfoComm Tech	Number of Broadband installation	Total Construction Spending (NT\$)
2007	43 villages, 8 counties	3 Villages in Alishan Township, Chiayi County			46	92,902,784
2008	42 tribes (neighborhoods), 10 counties	3 Villages in Alishan Township, Chiayi County	2 villages, Nantou County		50	77,787,313
2009	48 installation points in the tribes of 35 villages (neighborhoods), 28 townships, 12 counties	1 village, Ren Ai Township		1 Village, Fanlu Township	51	77,314,590
2010	Totally 10 installation points in the tribes of 7 villages (neighborhoods), 5 townships, 5 counties	1 village, Yixing Township			11	13,897,057
	<b>Total</b>				<b>158</b>	<b>261,901,744</b>

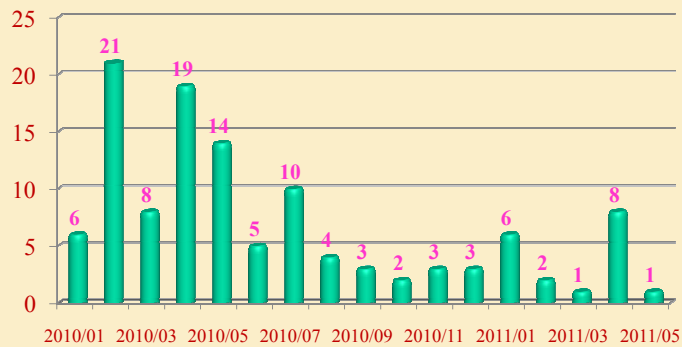
## VI. REDUCE TARIFF RATE

- **Price cap:** adopted to push the telecom operators to lower their tariffs and enhance efficiency
- **Items and scopes:**
  - **Fixed Network Services:** the adjustment coefficient is 4.816% for 7 services in ADSL line rental fees
  - **Mobile Services:** the adjustment coefficient is 5% for communication between mobile telecom service operators, mobile phones calling home phones as well as domestic text messages
- **Period:** Apr. 1, 2010 ~ Mar. 31, 2013. Relative rates have decreased for 2 consecutive years and will continue to 2013
- **Benefits:** 41million subscribers

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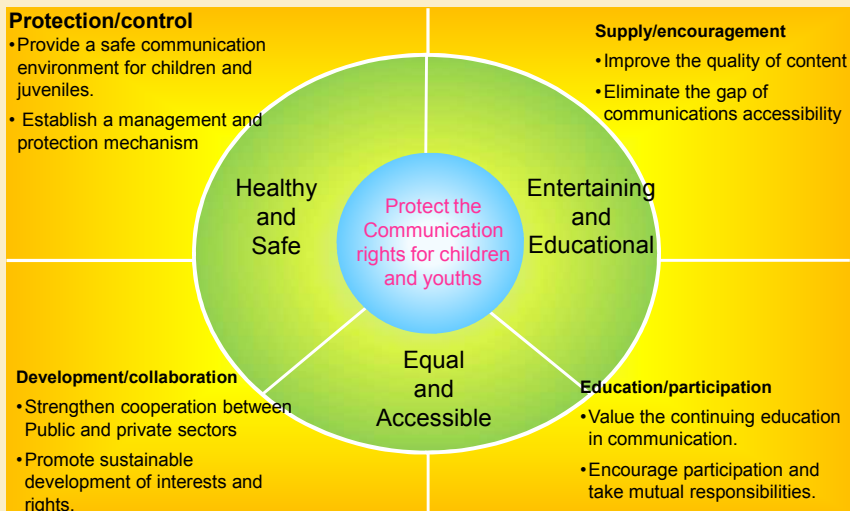
## VII. CLAMPING DOWN ON PIRATE RADIO STATIONS

- **Maintain order and protect legal communication**
  - Compile evidence against pirate radio stations and increase their operating costs
  - Enhance synergy in the fight against pirate radio stations
- **Total of 116 pirate radio stations were clamped from Jan. 2010 to May 2011**



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## VIII. WHITE PAPER ON COMMUNICATIONS RIGHTS OF CHILDREN AND JUVENILES



- It is expected that the White Paper will be introduced this year

**Thank you for Your Attention**

[www.ncc.gov.tw](http://www.ncc.gov.tw)

附件三：「OVERVIEW AND BENCHMARKS OF UNIVERSAL  
TELECOMMUNICATION SERVICES IN CHINESE TAIPEI」簡報稿



***Overview and Benchmarks of  
Universal Telecommunication Services  
in Chinese Taipei***

*Mr. Ching-Heng Lin  
Operational Administration Dept. of NCC  
March 23, 2008*



**National Communications Commission**

**Outline**

- ◆ **Establishment of Universal Services in Chinese Taipei**
- ◆ **Universal Services Fund**
- ◆ **Regulatory Structure**
- ◆ **Subsidy Method**
- ◆ **Scope and Targets**
- ◆ **Data Communications Access Universal Services**
- ◆ **Conclusion**

National Communications Commission (NCC) 1

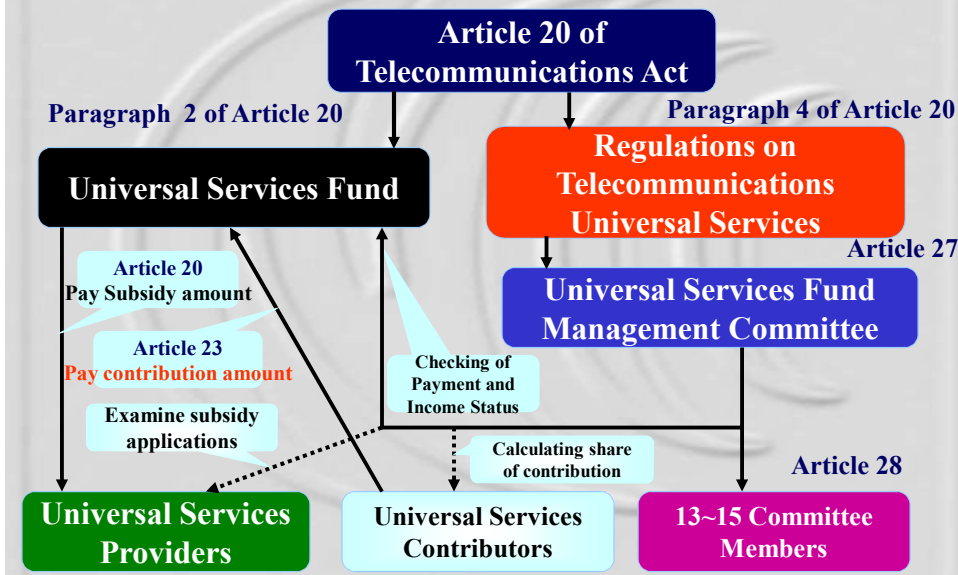
## Establishment of Universal Services

- ☞ Promotes the **basic communication rights** of citizens
  - ☞ Ensures fundamental telecommunications services are enjoyed **equitably** by all citizens **at reasonable prices**
  - ☞ Accommodates the government's policy of **establishing an information society**
  - ☞ NCC facilitates universal services in accordance with relevant provisions of the Telecommunications Act.
- ◆ Operators do not wish to sustain losses by providing telecommunications services in remote areas - operators are cost conscious and profit-oriented.

## Universal Services Fund

- ◆ Fund was set up in **August 2001**
- ◆ Management Committee - **scholars, experts, and government representatives** - was established in **October 2001**
  - ☞ Implements matters relating to universal services through a **collegiate system**
  - ☞ **Reviews and assesses losses** of service providers in providing universal services
- ◆ NCC requires all operators with telecom revenues over U\$ 6.25 million to **share losses on a pro rata basis (based on the annual telecom revenues of each operator)**, compensating universal services providers for their losses

# UTS Regulatory Structure



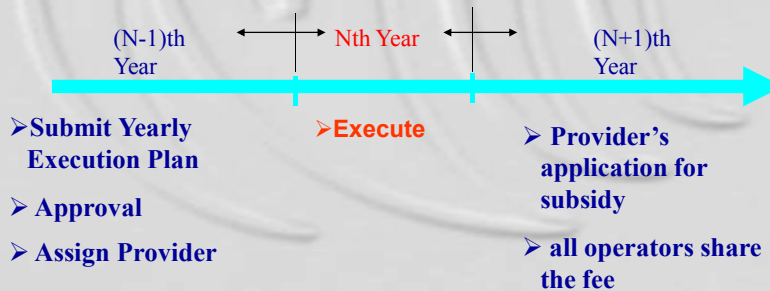
National Communications Commission (NCC)

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## Subsidy Method

### ◆ Operation of Universal Services

- ☞ Universal Service Providers submit their Yearly Voice and Data Communication plan one year before the Execution Year. This may be executed after approval.
- ☞ One year after Execution, Universal Service providers receive subsidies according to the sharing ratio calculated by all operators' sales revenue.



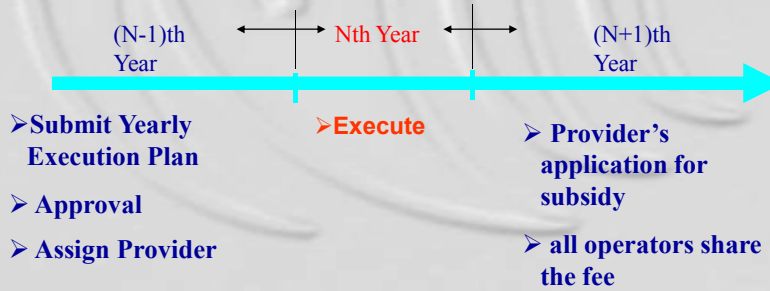
National Communications Commission (NCC)

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## Subsidy Method

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## Scope and Targets of UTS

Type	Service Items	Subsidy Items	Execution Year	Amount & Subscribers Subsidized in 2006	Penetration of Household
Voice	Local Phone Service for non-economical areas	Subsidies to cover losses	2002 to date	US 23,927,360 / 219,569	97.56%
	Uneconomic Public Payphone Service	Subsidies to cover losses	2002 to date	US 8,851,884 / 26,824	—
	Safety Communication Service in Coast Radio Station for ships in danger	Subsidies to cover losses	2002-2006 (Already stop applying)	US 4,324,055	—
Data	Favorable rate for subsidizing High, Junior, Elementary schools and Public libraries	Monthly Local Data communication line lease charge	2002 to date	US 1,984,761 / 4918	FTTB :80%
	Data communication access service for non-economical areas	Subsidies to cover losses	2007 to date (Added in 2006 amendment)	—	66.41%



## Compensating the losses of UTS providers

### Annual compensation: Subsidies shrink year by year

#### ☞ Voice

2002 : US\$ 74,214,810

2003 : US\$ 57,422,271

2004 : US\$ 47,146,985

2005 : US\$ 43,126,411

2006 : US\$ 37,103,239

#### ☞ Data

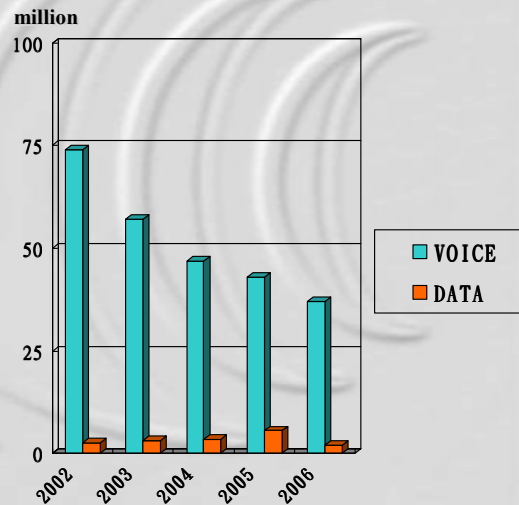
2002 : US\$ 2,709,198

2003 : US\$ 3,130,938

2004 : US\$ 3,570,481

2005 : US\$ 5,666,616

2006 : US\$ 1,984,761



National Communications Commission (NCC)

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## Data Communications Access Universal Services

- ◆ At the end of 2007, NCC had achieved its goal of providing broadband internet access to remote mountainous areas to reduce digital divide
  - ☞ 18 aboriginal villages still have no broadband service
  - ☞ 28 remote villages provided with 256Kbps
  - ☞ 46 (18 + 28) villages had been provided with 2Mbps Broadband Internet service by the end of 2007
- ◆ Related regulations were revised and augmented in 2006

National Communications Commission (NCC)

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## Compensating the losses of UTS providers

年度 項目	91	92	93	94	95	96	97	98	99
不經濟地區 電話服務	1,315,123,267	1,033,766,406	952,882,002	840,016,938	765,674,549	475,355,577	490,294,445	497,468,985	494,897,179
不經濟公用 電話服務	827,878,340	625,680,864	413,395,201	392,934,419	283,260,314	171,771,819	157,826,281	151,443,937	127,338,438
海岸電臺船 舶遇險及安全 通信服務	231,872,344	178,065,420	142,426,320	147,093,813	138,368,811				
中小學校優 惠補助	86,694,329	100,190,008	114,255,399	181,331,704	158,813,363	177,668,755	180,900,502	187,430,965	166,876,137
不經濟地區 數據通信服 務						58,990,261	53,989,462	57,977,556	58,543,976
合 計 (元)	2,461,568,280	1,937,702,698	1,622,958,922	1,561,376,874	1,346,117,037	883,786,412	883,010,690	894,321,443	847,655,730

## Conclusion

- ◆ Significant Reduction of the Digital Divide
- ◆ Nationwide Connection
  - ◆ All remote areas have broadband internet service
- ◆ The Next Phase : **Broadband Service for Tribal Habitats**
  - ◆ Provide aboriginal tribes broadband data communication service

## Reference

- ◆ [www.ncc.gov.tw](http://www.ncc.gov.tw)
- ◆ Telecommunications Act  
([http://www.ncc.gov.tw/English/news\\_detail.aspx?site\\_content\\_sn=17&is\\_history=0&pages=0&sn\\_f=364](http://www.ncc.gov.tw/English/news_detail.aspx?site_content_sn=17&is_history=0&pages=0&sn_f=364) )
- ◆ Regulations on Telecommunications Universal Service  
([http://www.ncc.gov.tw/English/news\\_detail.aspx?site\\_content\\_sn=66&is\\_history=0&pages=1&sn\\_f=99](http://www.ncc.gov.tw/English/news_detail.aspx?site_content_sn=66&is_history=0&pages=1&sn_f=99))
- ◆ The Process of Extending Broadband Internet Coverage to Every Village  
([http://www.ncc.gov.tw/chinese/files/07112/721\\_4092\\_071217\\_1.ppt](http://www.ncc.gov.tw/chinese/files/07112/721_4092_071217_1.ppt))
- ◆ Internet Broadband Usage in Taiwan (Jan 31,2008)  
(<http://www.twnic.net.tw/download/200307/200307index.shtml>)



***Thank you for Your  
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