Taiwan:

A Ubiquitous Network Society

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Chairperson, NCC

Taiwan

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Outline

◆ **Introduction of NCC**

◆ **Market Status**

◆ **National InfoCom Development Plan**

◆ **Wireless Broadband Access(WBA)**

◆ **Challenges and Opportunities in Taiwan**

Introduction

Brief History

- ◆ **Established in Feb. 2006 by merging**
  - ✓ **Directorate General of Telecom of MoTC**
  - ✓ **Department of Broadcasting Affairs of GIO**

- ◆ **Independent regulatory authority that oversees telecom and media enterprises**

Commission

◆ **Directed by seven commissioners**

  ✓ **Appointed by Premier, upon approval of legislators**

  ✓ **4-year term, with possibility of consecutive terms**

  ✓ **Background: telecom, media, economics, law**

◆ **Chairperson and Vice Chairperson are determined by internal election among Commissioners**

◆ **At least one Commission Meeting is held every week**

Commissioners

(From left to right) Commissioners Chin-Nan Hsieh, Chorng-Jian Liu, Chi-Hui Chung, Chairperson Bonnie Peng, Vice Chairperson Cheng-Tsang Chen, Hsiao-Ling Weng and Ta-Sung Lee

Role of the NCC

MoTC
Policy Maker

- ✓ Overall planning of communications resources
- ✓ Opening of new communications services
- ✓ Spectrum allocation
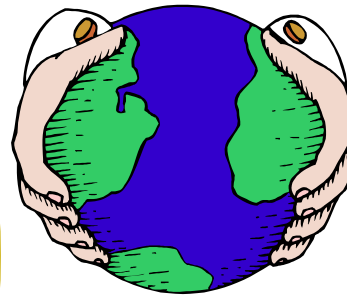
NCC
Regulator

- ✓ Regulation of communications resources and services
- ✓ Implementation of regulatory policies
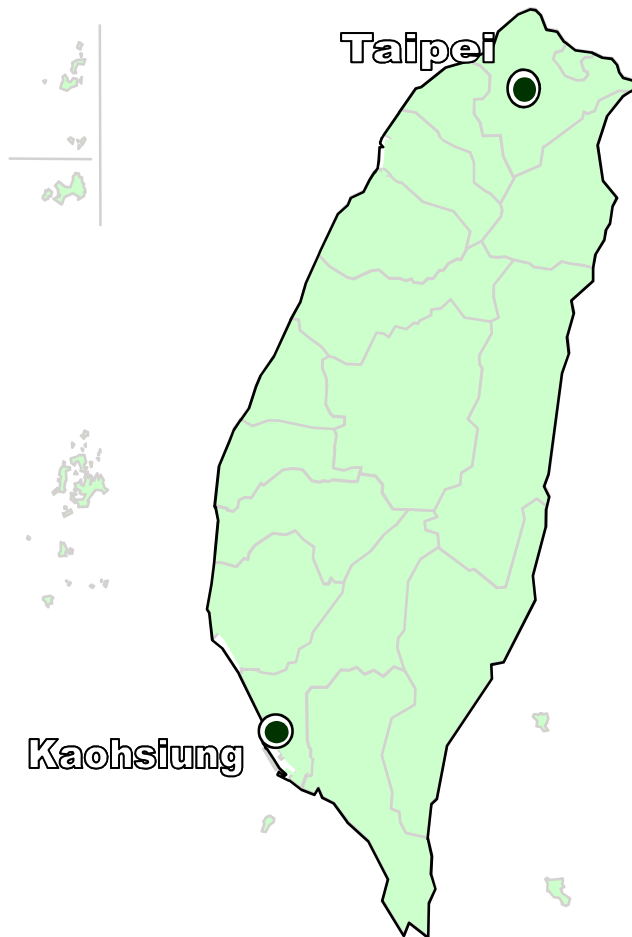- ✓ Licensing and spectrum assignment

MoEA
Industry Promoter

Market Status

Taiwan Profile

Items	Figures
Population	23 million
No. of Households	7.65 million
Geographic Size	36,188 km^2
GNP Per Capita	US$17,542
Household Broadband Penetration*	81%
Major Broadband Service Bandwidth	2 Mbps

*Including fixed & mobile

Penetration of Major Telecom Services

(Market Penetration, %)
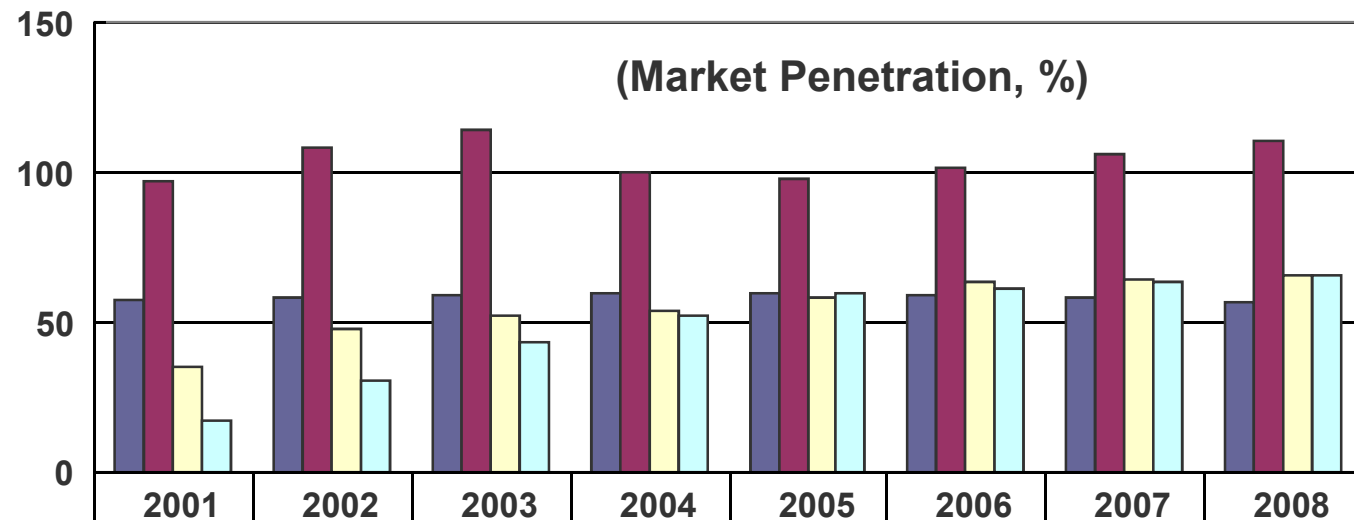
	2001	2002	2003	2004	2005	2006	2007	2008
■ Local telephone subscribers per 100 inhabitants	57.3	58.2	59.1	59.6	59.8	58.9	57.9	56.8
■ Mobile subscribers per 100 inhabitants	97.2	108.3	114.1	100.3	97.4	101.6	105.8	110.3
□ Internet users per 100 inhabitants	34.9	47.6	51.9	53.8	58.0	63.8	64.4	65.8
□ Fixed broadband household penetration rate	17.0	30.3	43.2	52.2	59.5	60.9	63.8	65.6

2009年資料後補

Leading ICT Products

Product	Worldwide Market Share (2008)	Product	Worldwide Market Share (2008)
PC	99.0%	Cable Modem	90.2%
Notebook	92.5%	WLAN NIC	89.0%
Motherboard	92.5%	DSL CPE	77.8%
LCD Monitor	67.2%	VoIP Router	76.1%
Smart Phone	22.4%	IP Phone	69.1%
Cell Phone	8.8%	IP STB	44.3%

Taiwan: World Rankings

2 **ICT Manufacturing Industry**
2008 survey on global ICT industry competitiveness, Economist Intelligence Unit

4 **Broadband Infrastructure and Usage**
2008 global user penetration rates, released by FTTH Council

5 **Household Broadband Penetration**: **81%**
Strategy Analytic June 2009

7 **Digital Opportunity Index, DOI**
World Information Society Report 2007, published by ITU

National InfoCom Development Plan (NIDP)

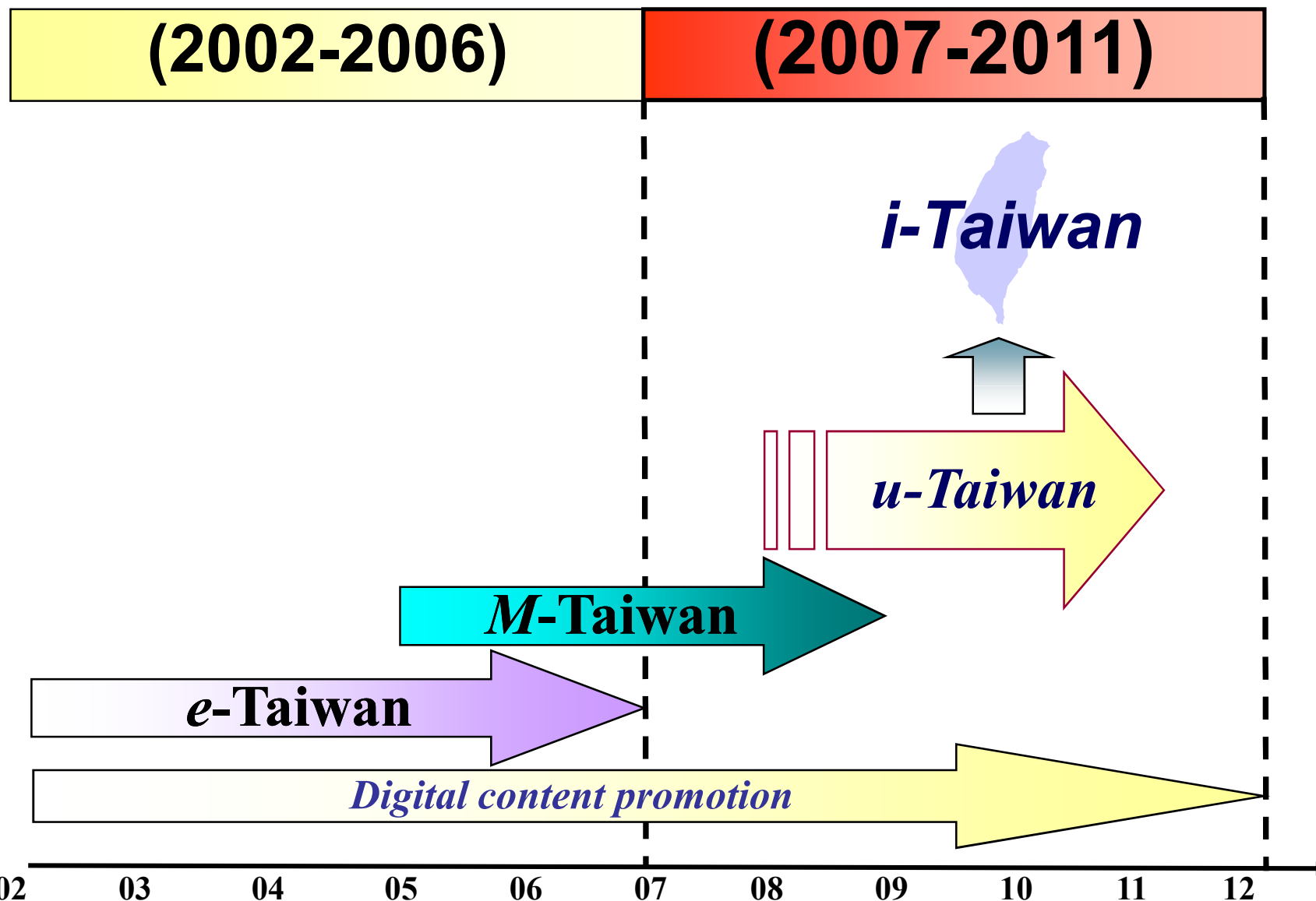# Goals of NIDP

◆ **Create a technologically advanced island with superior broadband service**

◆ **Construct a sound, convenient, cultural and healthy ubiquitous network society**
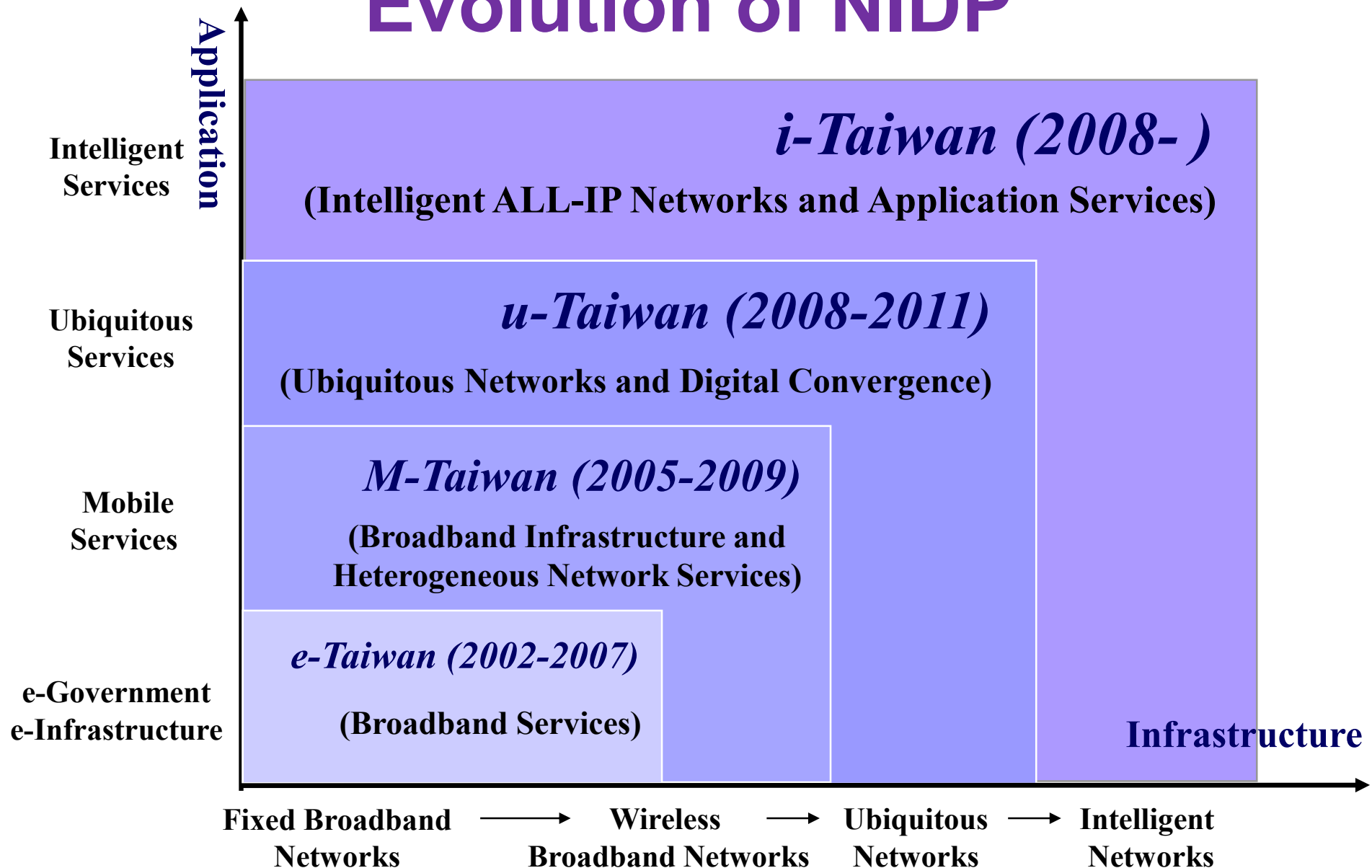
◆ **Enhance national competitiveness**

Timetable of NIDP

(2002-2006) **(2007-2011)**

i-Taiwan

u-Taiwan

M-Taiwan

e-Taiwan

Digital content promotion

02　03　04　05　06　07　08　09　10　11　12

M-Taiwan

US$0.9 Billion — US$220 Million

6,000 km Broadband Ducts

Applications over WBA-cellular Dual Network

Broadband

Pipeline

FTTH/Cable

Backbone

Taipei Metro Backbone

Taichung Metro Backbone

KaoChung Backbone

Local Area Network

AP

AP

AP

WLAN/WiMAX
(Wireless Broadband)

Dual Network

Cellular
(GSM/GPRS/ 3G/PHS)

Gov

- Gov. Service
- Surveillance
- m-Traffic Service
- m-Medicare
- ...

Enterprise

- m-Commerce

Home

- Video/TV
- VoIP
- Video Phone
- Homecare
- ....
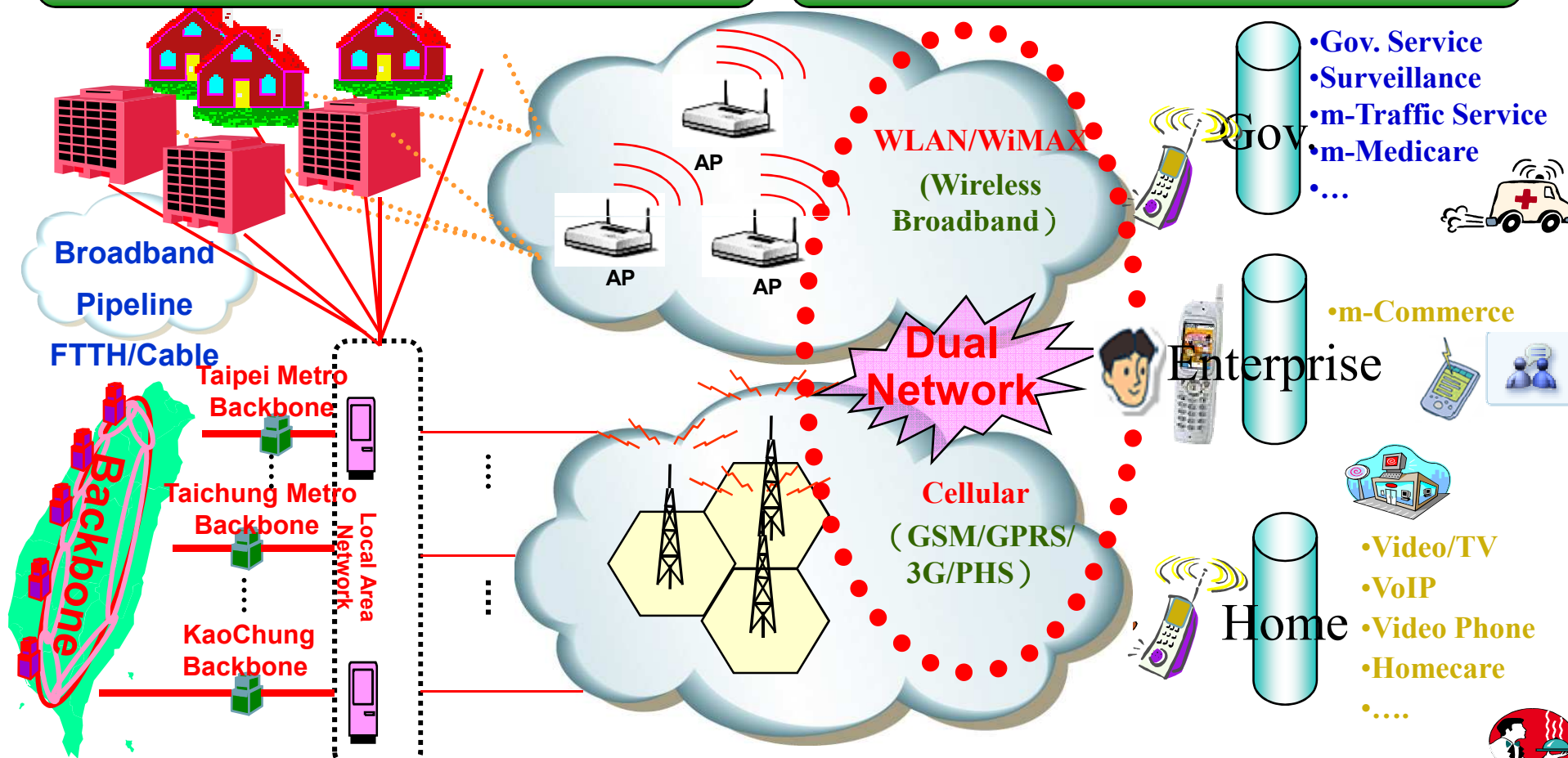
i-Taiwan

2009 funding: USD$5.2B

W — *Wireless & Broadband Convergence*

I — *Cultural & Creative Industry*

S — *Superior e-Government*

D — *Demand-driven Applications*

O — *Equal Digital Opportunity*

M — *Manpower Cultivation*

Intelligent Taiwan

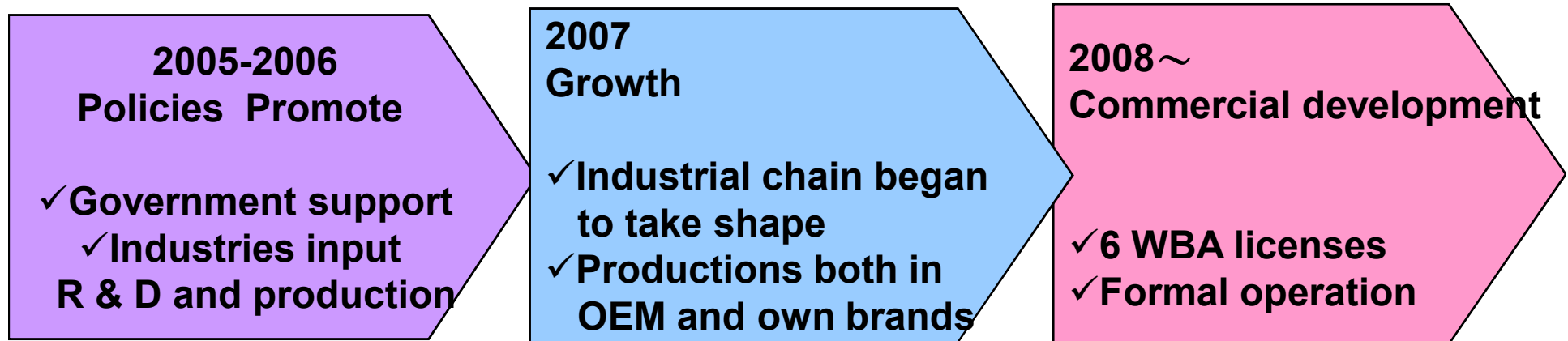# Wireless Broadband Access(WBA)

National Communications Commission

Purpose

◆ **A Key Enabler for M-Taiwan**

◆ **Create a communications market based on a high-tech and mature industry chain**

◆ **Support for domestic industries to advance in international markets**

◆ **Dedicated funding is allocated to subsidize R&D on related ICs, CPEs and base station equipment**

◆ **Build a mobile island with "broadband everywhere"**

Milestones

2005-2006
Policies Promote

✓**Government support**
✓**Industries input**
R & D and production

2007
Growth

✓**Industrial chain began**
to take shape
✓**Productions both in**
OEM and own brands

2008～
Commercial development

✓**6 WBA licenses**
✓**Formal operation**

Industry Structure and Manufacturers

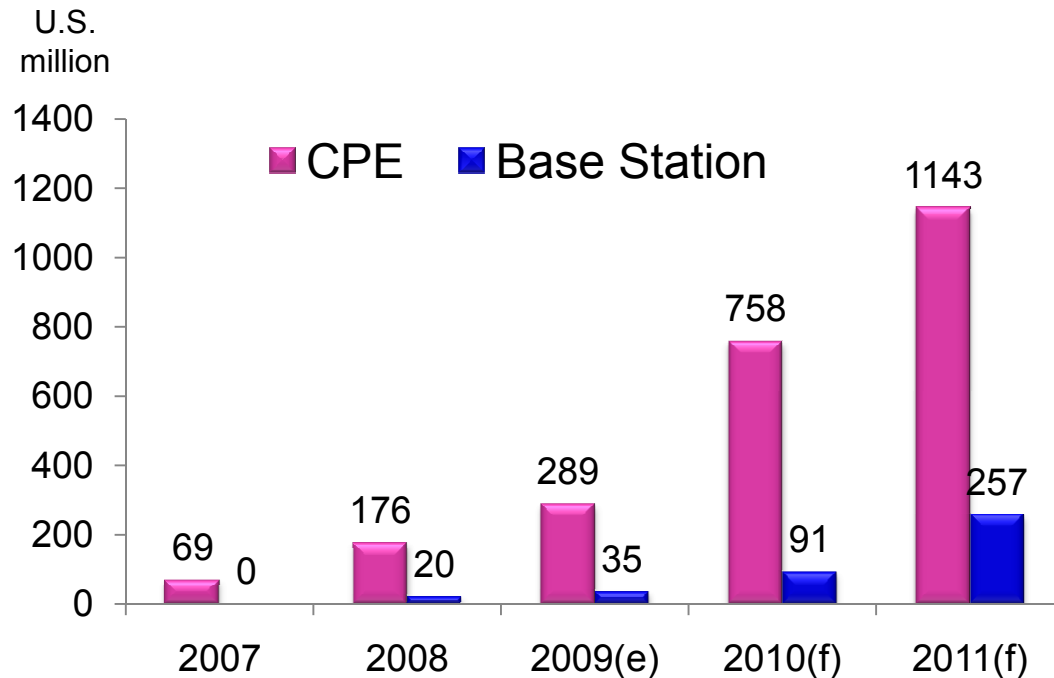| Key Chip	Product Development	Network Integration	Testing & Certification	Service
Chip ✓ITRI ✓MediaTek	**CPE** ✓Accton ✓Acer ✓ASUS ✓Foxconn ✓HTC ✓… **BTS** ✓Gemtek ✓Mti ✓Tecom ✓Umec ✓ZyXEL ✓…	**ASN Gateway** ✓Tecom ✓ZyXEL **Core network & System Integration**	**Test Service** ✓Sporton ✓TTC-CCS ✓SGS **Test Equipment**	**Service providers** ✓Tatung InfoComm ✓First International Telecom ✓Global Mobile Corporation ✓…
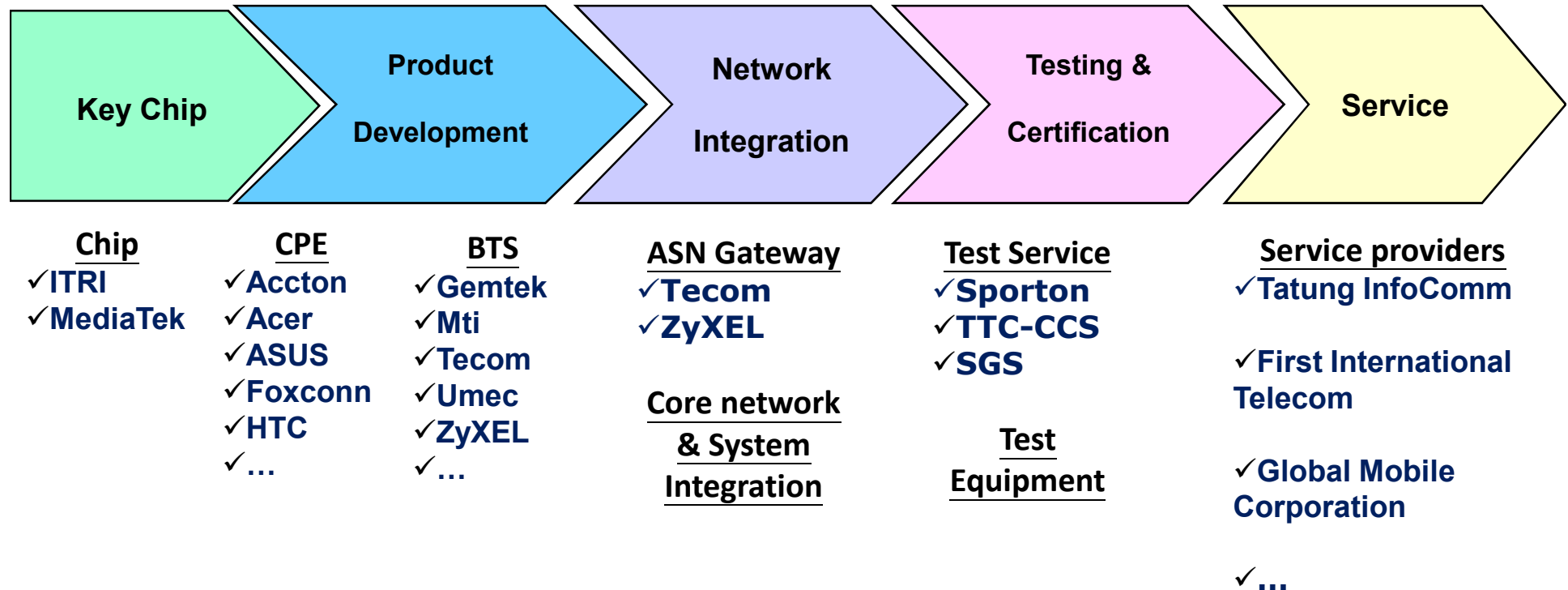
Development

◆ **6 WBA licenses were awarded in July, 2007 via a 2-stage licensing procedure: beauty contest / auction**

◆ **Each operator was granted 30MHz at 2.5GHz band**

◆ **By January 2010, three operators had launched WiMAX services in 4 cities**

◆ **Deadline for commercial operation: March, 2010**

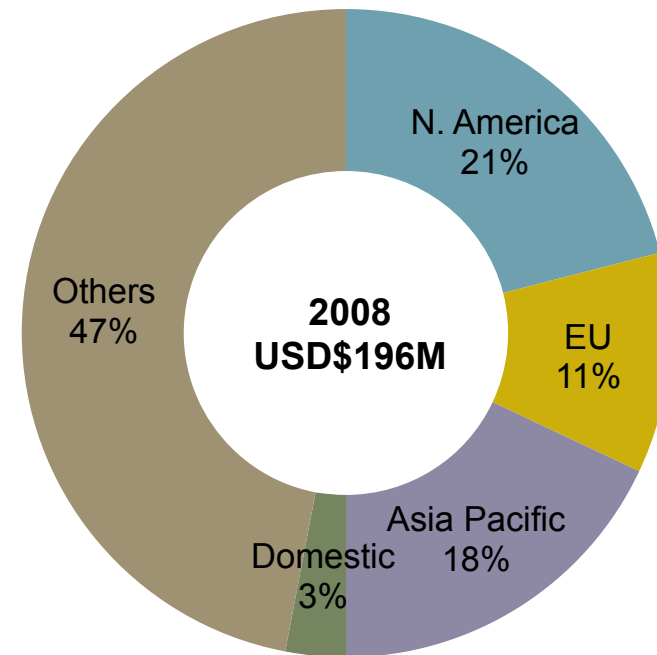◆ **Combine voice, internet, IPTV and WiMAX to form a viable Quadruple play Service**

Statistics

U.S. million

Sales Scale of Taiwan WiMAX: 2007- 2011

Legend: CPE, Base Station

2007: CPE 69, Base Station 0
2008: CPE 176, Base Station 20
2009(e): CPE 289, Base Station 35
2010(f): CPE 758, Base Station 91
2011(f): CPE 1143, Base Station 257

Sales Market of Taiwan WiMAX

2008 USD$196M

- N. America 21%
- EU 11%
- Asia Pacific 18%
- Domestic 3%
- Others 47%

Source: Industrial Technology Research Institute IEK

Application

◆ **Since 2005, WiMAX network has been set up in 15 cities and accommodates more than 80 applications in areas such as VoIP, mobile, entertainment, healthcare, mobile learning & mobile security:**

- ✓ **Mobile Vehicles Position Location Service: real-time monitoring of gravel trucks to reduce illegal mining, dumping, and speeding violations**

- ✓ **WA! M-Living: provided hearing-impaired mobile video communication services for the 2009 Deaf Olympics in Taiwan to offer real-time services, effectively solving the lack of resources of sign language interpreters**

Challenges and Opportunities in

Mobile Taiwan

Challenges

◆ **The development of WiMAX and LTE is still changeable globally.**

◆ **How do WBA service providers compete with original broadband service providers?**

◆ **Effectively enhancing mobile network coverage while addressing public resistance due to health issues.**

◆ **Value added contents often incur disputes between consumers and operators.**

Opportunities

◆ **The development and technology of WiMAX have matured enough to move forward to 4G**

◆ **Ubiquitous high-speed networking and value-added application services increase national competitiveness**

◆ **The successful commercial experiences and the communications chain of WiMAX in Taiwan may offer support to developing regions and remote areas globally**

Thank You for Your Attention

For more information, please visit

www. ncc. gov. tw

National Communications Commission