出國報告(出國類別：國際會議)

出席蒙古「數位廣播論壇」報告

服務機關：國家通訊傳播委員會
姓名職稱：中區監理處處長蕭祈宏
中區監理處科長王瑞琦
派赴國家：蒙古
出國期間：2011 年 11 月 20 日至 11 月 24 日
報告日期：2012 年 2 月 15 日

摘要

參加日期：2011 年 11 月 20 日(星期日)至 2011 年 11 月 24 日(星期四)

出國地點：蒙古烏蘭巴托

出國機關：國家通訊傳播委員會

出國人員：蕭處長祈宏(擔任團長)、王科長瑞琦

論壇主辦機關：蒙古通訊規管委員會（Communications Regulatory Commission，以下簡稱 CRC）

內容摘要：本會與 CRC 於去年簽訂瞭解備忘錄以來，經由數次的互相往來交流，雙方對於通傳政策與規管、國際通傳趨勢方面都得到互相瞭解、學習的雙贏利益。因蒙古近年來致力於推動電信自由化與廣播數位化，因此積極向包括我國在內通訊傳播先進之國家參考學習，此次由其主辦的國家數位廣播論壇(National Digital Broadcasting Forum)活動，正是以電視廣播之數位轉換及數位電視傳輸標準議題為主軸，希望與會各國能提供有關數位轉換之觀點、計畫及相關實施經驗等給予蒙古當地相關專家、業者及政府官員做為參考。本會代表我國發表的題目是「數位轉換-台灣之前景與展望」，得到韓國（預定 2012 年 12 月完成切換）、德國尤其是蒙古之稱許，謂將對其數位化之進行有莫大裨益；而藉由參考日本於 2011 年 7 月已成功轉換之經驗，亦可供我國如火如荼的數位轉換工作之借鏡。另外，經由餐宴場合與各國代表就通傳相關議題之交流互動，亦拓展我國與其他各國之交流情誼。

關鍵詞：Digital Switch-over、CRC、數位電視轉換、數位改善站

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壹、目的

國家通訊傳播委員會（以下簡稱 NCC）前已於 2010 年 3 月 29 日與蒙古 CRC 簽訂『通訊傳播監理合作瞭解備忘錄(MoU)』，目的在於促進雙方於通訊傳播監理相關各方面之交流合作。在 2011 年 8 月中旬，我國由 NCC 蘇主委帶領魏委員及 NCC 官員前往蒙古首都正式拜訪蒙古 CRC 主席，並參訪蒙國其他通訊傳播相關機構及業者，持續進行雙方在通訊傳播監理各議題與經驗之分享與交流。

蒙古人口數雖僅約 270 萬人，惟近年來各項產業發展迅速，加上與各國合作探勘發現並積極開採豐富的原物料礦產，貢獻其國內經濟急遽成長，為一極富潛力之新興市場，各種商機發展可期。而該國郵電傳播之主管機關「蒙古通訊監理委員會」-CRC-近年來亦致力於推動電信自由化與廣播數位化，因此積極向包括我國在內通訊傳播先進之國家參考學習，此乃本次在蒙古首都烏蘭巴托(UlaanBaatar)由蒙古 CRC 主辦的數位廣播論壇(Digital Broadcasting Forum)活動之主要目的。

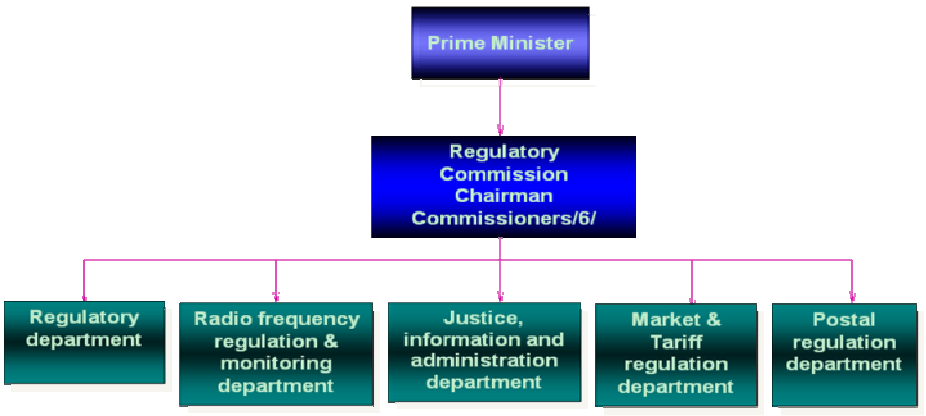
本次數位廣播論壇於 2011 年 11 月 22-23 日於烏蘭巴托的成吉思汗飯店舉行，我國受邀參加此次論壇，由國家通訊傳播委員會中區監理處處長蕭祈宏與科長王瑞琦代表出席，並以「數位轉換－台灣經驗與展望」（Digital Switch-over, Taiwan Perspective）為題發表專題簡報，分享我國推動數位轉換計畫之目前進度、推展經驗與預期成果。參加目的除了上述分享我國經驗之外，亦能汲取相關參與國如日、韓、德等之數位轉換及其相關議題之實施經驗，同時藉由國際交流場合，也能強化我國外交之深度並增進官員之國際視野。

貳、過程

一、主辦機關-蒙古通訊監理委員會介紹[1]

2001 年蒙古國會通過修訂通訊法(The Mongolian Communications Law)，建立了朝向現代化之立法環境，強調保護消費者權益、收費之公正性監督、應符合服務品質改善之需求及發照之監督等，並依據該法於 2002 年設立蒙古通訊監理委員會(THE COMMUNICATIONS REGULATORY COMMISSION, CRC)，是一個獨立的政府監理機關，其職掌包括發照、技術標準、收費管理及網路互連、服務品質之監督及無線電頻率之管制及指配等。它負責管理和監督包括競爭問題、固定線路通信、無線通信、電視傳輸、廣播傳輸、衛星傳輸提供的網絡和服務、頻譜管理、郵政服務和網際網路等範圍廣泛的議題，以確保公眾利益，CRC 的管轄範圍涵蓋整個的蒙古地區。

CRC 的委員會由總理任命的 7 個委員組成，任期為 6 年，主任委員由蒙古總理提名，其組織架構如下：



CRC 肩負發展蒙古成為一個現代化及具國際競爭力國家之使命。以致力於追求公平、透明及效率為其核心價值。其運作指導原則為有見地、公開、即時、專

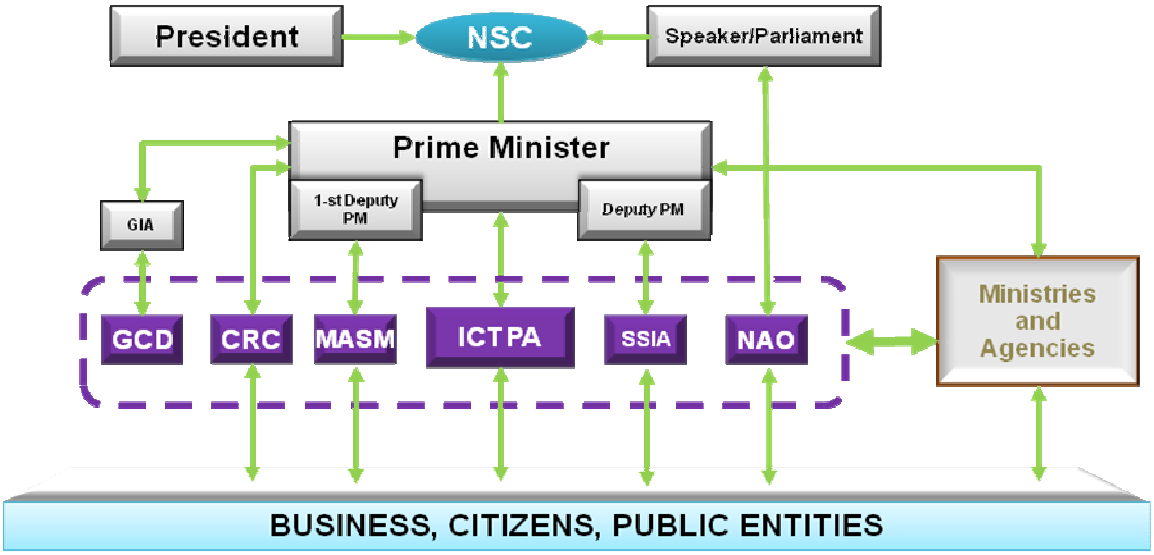
[1] 本節參考陳春木等 2011〈 NCC 與 CRC 官式互訪雙邊交流會議出國報告〉。

業、負責及優質人力資源等。

CRC 主要職掌有：規管蒙古通訊市場、負責相關法規制訂之建言、案件調查、監理決定之宣告(adjudication)、執法（包括罰鍰或撤銷執照及解決紛爭等），其範圍可分項如下：

- ●公平的競爭環境
- ●問題的牌照和許可證條件的監測
- ●互連
- ●關稅調控
- ●標準化
- ●號碼管理
- ●無線電頻率的分配和監督
- ●服務品質
- ●爭議的解決
- ●普及服務

至於蒙古政府整體有關資訊、通訊與廣電方面的架構組織如下：



NSC – National Security Council; GIA – General Intelligence Agency; GCD – Government Communications Department; CRC – Communications Regulatory Commission; MASM – Mongolian Agency for Standardization and Measurements; ICTPA – Information and Communication Technologies and Post Authority; SSIA – Specialized State Inspection Agency; NAO – National Audit Office

二、論壇議程

TUESDAY, 22 NOVEMBER 2011 (Day 1)	
13:00 - 14:00	Registration
14:00 – 14:30	**Opening Session** **Opening Remarks** MR. BATBOLD SUKHBAATAR Prime Minister of Mongolia MR. BOLDBAATAR BAT-AMGALAN Chairman and CEO, Communication Regulatory Commissions (CRC), Mongolia MR. BAT-ERDENE JALAVSUREN Chairman, Information, Communication Technology, and Post Authority (ICTPA), Mongolia
14:30 - 14:40	**Group Photo**
14:40 – 15:00	**Introduction of the National program for Digital TV & Radio** MR. MEND-OCHIR MELSCHO, Commissioner, Director-General, Radio Frequency Regulation & Monitoring Department, CRC
15:00-16:00	**International Presentations** Objective: to learn International experience and transition to digital television **DVB project** **NCC of Taiwan**
16:00 – 16:20	**Coffee/Tea break sponsored by CRC**
16:20 – 17:20	**Republic of Korea** **Japan**
17:20 – 18:00	**Q&A**
WEDNESDAY, 23 NOVEMBER 2011 (Day 2)	
09:00 – 09:30	**Current status of International digital television transition and recommendations from ITU consultant service in Mongolia** MR. AMGALAN ZANDRAA, Expert, Radio Frequency Regulation & Monitoring Department, CRC
09:30 – 10:30	**Presentations of Digital TV & Radio working groups** Objective: to introduce and discuss working groups suggestion and recommendation **Working group: Identify terrestrial digital TV standard, network model and technical solution for digital TV studio**

	Recommendations to policy and adoption of the Digital TV standard in Mongolia (20 min) Network models (20 min) Digital TV studio solutions (20 min)
10:30 – 11:00	**Discussion**
11:00 – 11:30	**Coffee break**
11:30 – 12:30	**Working group: Develop recommendation and solution for transmission of Radio and Television broadcasting through digital system** Recommendations for analogy-digital simulcasting period Network models for retransmitting digital terrestrial television Network models for retransmitting digital terrestrial radio
12:30 – 13:00	**Discussion**
13:00 – 14:00	**Lunch break & exhibition**
14:00 – 15:00	**Working group presentations** **Working group: Identify digital radio standard, network model and solutions for digital radio studio** Recommendations to policy and adoption of the Digital radio standard in Mongolia (20 min) Network models (20 min) Studio solutions (20 min)
15:00-15:30	**Discussion**
15:30 – 16:00	**Coffee break**
16:00 – 17:00	**Working group:** Develop recommendation of technique and technology solutions for set top boxes of digital radio and television broadcasting Recommendations for the system and standard of the set top boxes and radio receivers (20 min) Research and recommendation of set-top-box procurement (20 minute) Conditions and technical requirements for the set-top-box
17:00 – 17:30	**Discussion**
17:30	**Closing** **Closing Remarks** MR. BOLDBAATAR BAT-AMGALAN, Chairman and CEO, CRC

三、 我國發表簡報之重點摘要

簡報名稱：**Digital Switch-over Taiwan Perspective**

本簡報大綱分

1.我國無線電視市場概要。

2. 無線電視數位化之時程計劃、規劃執行策略、期程劃分及預算。

3.計畫實施與執行現況。

4.結論。

四大項，重點分述如下:

（一）、我國無線電視市場概要

1. 我國有約 7.9 百萬之電視收視戶，家戶電視收視之滲透率達百分之 99.6，平均每戶擁有 2.2 部電視機。

2. 2011 年底地面無線數位電視涵蓋率為百分之 92.85。衛星廣播及電視頻道總數達 281 個。

3. 我國有線電視收視戶之比率是百分之 68.39，其餘收視衛星或無線或網路電視。有線電視是收視主流，但目前數位化比率仍低。

4. 現階段以無線電視數位化為主要工作重點。

5. 2010 年電視市場收益仍以有線電視為最大獲利者，達 1081 百萬美元，衛星廣播頻道市場達到 677 百萬美元，但無線電視市場仍有 377 百萬美元之譜。

6. 台灣從 2003 年起就進行無線電視數位化計畫，預計 2012 年 6 月底全面關閉無線類比信號。無線電視數位化計畫主要的目的包括：

i.增進數位涵蓋及數位信號品質，減少數位落差。

ii.提升文創產業、促進數位電視及消費電子市場。

iii.關閉類比轉換站以降低電視業者及地方政府財政負擔，同時亦可兼顧節能減碳之環保目標。

iv.廣為宣傳週知，讓民眾確實瞭解數位化的好處，減少斷訊衝擊。

v.補助低收入戶裝設機上盒，以降低弱勢族群負擔、維護其收視權利並減少地方政府之阻力。

7.因此，雖然我國只有不及 3 成的無線電視收視比率，為達上述多重目標，我國現正全力加速數位改善站之建置。

8.預計無線電視數位信號涵蓋率將從 2010 年的百分之 92.85，提高到 2012 年完成所有改善站建設後的百分之 96.7。

（二）、無線電視數位化之發展進程、規劃執行策略、期程劃分及預算

1.發展進程：台灣自 2003 年就開始做數位電視廣播，目前是雙軌並行。數位電視廣播發展進程，約可劃分為 5 個里程碑：

i.數位電視廣播之傳輸標準及頻寬，在 1997-1998 年選定，5 家數位電視頻道定頻。

ii.台灣全島於 2003 年開始數位電視廣播。

iii.2007 年，行動電視試播計畫開始。同時，數位電視廣播開始商轉。

iv.2008 年開始高畫質數位電視廣播試播（HDTV）。

v.2010-2011-2012，全力建設數位電視廣播改善站，預計 2012 年 6 月全面關閉類比電視廣播信號。

2.為順利達到 2012 年 6 月全面關閉類比電視廣播信號，轉換為全面數位化之目標，以及接續的長程全面高畫質、行動數位電視進程，我們擬定 4 大策略：

i.加強建設數位信號涵蓋改善站，或稱信號補隙站。為了保證數位信號涵蓋不差於甚至更優於類比信號，我國已於 2010 年建設完成了 7 站，2011 年完成 34 站，預計 2012 年再完成 9 站。

ii.補助低收入戶裝設機上盒，以降低弱勢族群負擔、維護其收視權利並減少地方政府之阻力。我國預計發放並協助全國約 12 萬低收入戶安裝數位機上盒，總經費約 9 百萬美元。另為增加數位電視收視滲

透率，一般家庭用戶所需自行購買之機上盒，亦會全力在政策上提高誘因，促使廠商降價以普及。

iii. 普及宣導一般收視民眾，有關數位轉換時程之相關政策：例如機上盒補助措施、裝機上盒的相關常識等等。同時，在北中南三區分別設立技術服務中心，以提供有關數位轉換之諮詢或相關問題之回應或幫助解決遭遇之疑難。

iv. 全力發展高畫質電視與行動數位電視：此策略之主要目的是經由監理規管機制與政策手段，促進高畫質電視與行動數位電視之相管產業發展。為達到此一目標，我們需要相關配套措施或政策，以形成足夠之誘因鼓勵廣播業者製播高畫質、高品質之在地畫節目。因此，政府可資利用的配套措施與規管手段例如：規定新進業者在第二階段數位電視執照申請或既有業者屆期申請換照審查時，必須提供一定比例之高畫質頻道或節目；同時也規定在主要時段必須保有一定的高畫質節目比率；另外，發給數位機上盒「可收視高畫質節目」之認證標籤，從終端之消費者與製造廠商著手，鼓勵其配合政府推動全面高畫質之目標。

v. 在此必須強調的是，所有以上揭示之相關政策作為與策略，均需要相關部門、利害關係機關團體之互助合作，亦即相關中央與地方政府機關、廣播電視業者、節目製造或衛星頻道商、終端設備商及施工人員等等，各個環節合作無間才能順利達成策略目標。其大約之分工如下:

新聞局：宣導數位轉換計畫、確立切換日期、機上盒補助政策。

內政部：提供及更新全國低收入戶資料庫。

地方縣市政府：建檔及維護縣內低收入戶資料，並與國家通訊傳播委員會共同建設數位改善站。

地方村里長：發送相關宣導品並告知數位切換日期、機上盒補助政策、聯繫低收入戶並協助廠商接洽安排有關裝機之時程。

國家通訊傳播委員會：成立數位轉換技術服務中心，提供有關數位轉換之諮詢或相關問題之回應或幫助解決遭遇之疑難。

3.期程劃分及預算:

i. 建設數位改善站(或稱信號補隙站) ：2010-2012，在既有已使用中的 24 發射站基礎上，針對收視不良及偏遠地區，為了保證數位信號涵蓋不差於甚至更優於類比信號，我國已於 2010 年建設完成了 7 站，2011 年完成 34 站，預計 2012 年再完成 9 站，以達成最終 96.7%的信號涵蓋率。這期間之預算，達 1 千 7 百萬美元。

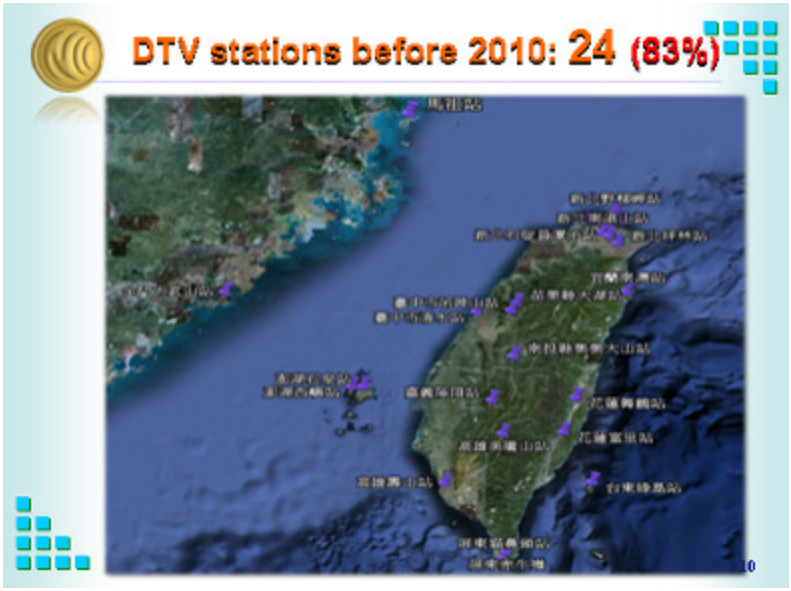
ii. 裝設低收入戶免費補助機上盒：2011-2012，在 2011 年下半年開始裝設，預計年底前完成約 8 萬 4000 部，在 2012 年 4 月底前再裝設 3 萬 5000 部。機上盒並包含裝機之施工費用，總共花費 8 千 5 百萬美元。

iii. 民眾宣導及技術指導：2010-2012，於 2011 年 6 月在全國北、中、南三區成立技術服務中心，以服務台窗口型式，提供免付費電話諮詢專線解答民眾問題。另外，特別成立專屬網站，供一般民眾上網查詢與瀏覽。同時亦配合地方政府，到偏鄉舉辦數位轉換說明會。在電視上也專門製作了宣導短片，密集播放以週知民眾。此一項目共花費 3 千 8 百萬美元。

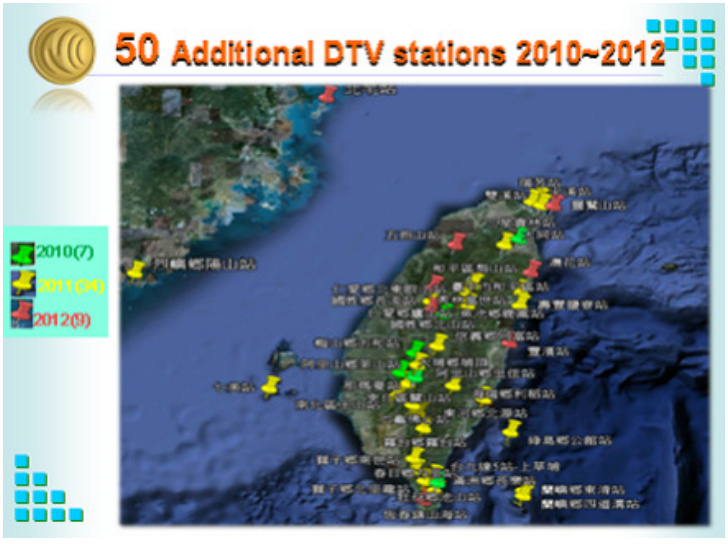
iv. 分階段、分區轉換：2011-2012.6 預計從 2011 年起陸續在部份已建好數位改善站並補助發放完成之偏遠封閉地區，關閉類比發射站，至 2012 年 6 月底止全面關閉。

（三）、計畫實施與執行現況

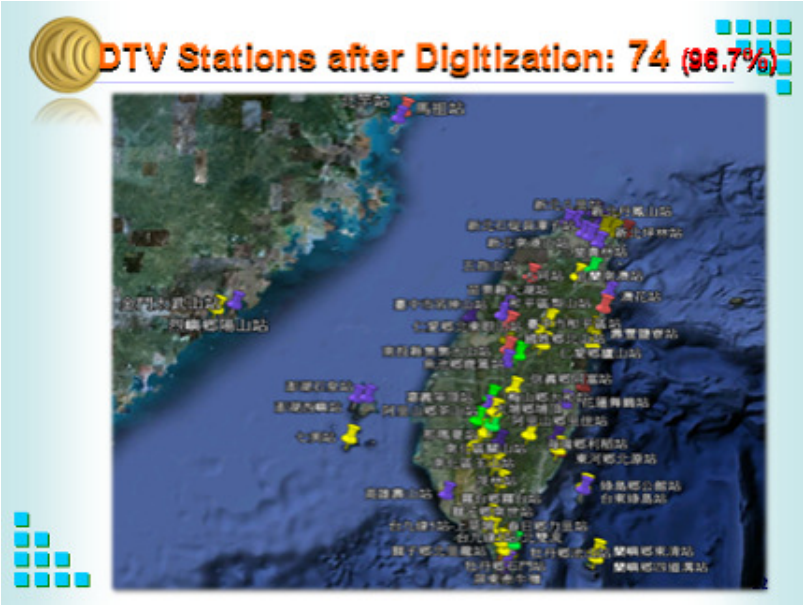
1.2010 年之前 24 個數位發射站，涵蓋百分之 83 的數位收視戶。



2.2010 到 2012，我國積極致力於建設 50 座數位改善站，以增加數位信號之涵蓋，這些增加的站大多位於偏遠山區，花費很多人力與資源。而從百分之 83 增加到百分之 96.7 的涵蓋率，花了國家巨大的預算似乎沒增加多少效益而顯得很不划算，然而我國政府仍為了保障偏遠地區民眾之收視權利，降低數位落差而決心全力去做。



3.完成建設後，總共有 74 個數位站台服務全台灣，涵蓋率達到百分之 96.7。



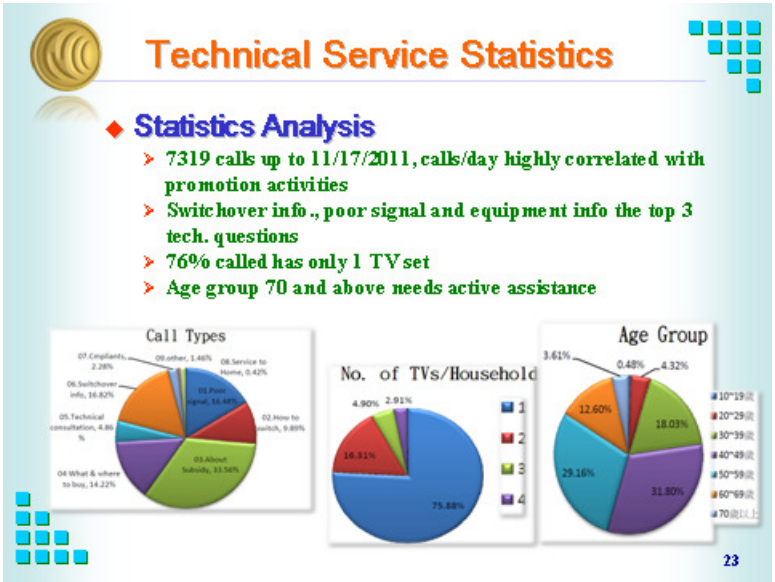
4.先期實施 1200 部高畫質數位機上盒免費安裝到低收入戶家中，同時以此樣本進行收視情況調查與統計，並從裝機過程遭遇之困難(例如都會區因大樓林立導致信號之遮蔽)累積經驗，以作為後續大量裝機之參考對策。

5.民眾宣導：包含由新聞局主導之全國廣告、5 家無線電視廣播業者的播送宣導短片，並以插播式字幕方式，預告類比無線電視頻道收回日期。

6.至各地區與地方政府共同舉辦說明會

7.設立數位轉換專屬網頁。

8.成立技術服務中心，並針對各種申訴問題樣態作統計分析。



（四）、結論

1.電視廣播數位化不僅對收視戶提供嶄新的體驗、對廣播業者提供全新的商機，亦因為類比頻譜的回收而獲得了所謂的「數位紅利」。

2.我國決心在明年 6 月如期關閉無線電視類比信號，正式邁入無線數位電視時代。

3.現階段的挑戰包括民眾認知宣導的全面化、加強數位頻道與高畫質節目內容、積極修法以邁向全面數位匯流的目標等。

參、心得及建議

我國預定在明年 6 月關閉無線電視類比信號，正式邁入無線數位電視時代，而且為了保障約有 3 成無線電視收視用戶之收視權益，我國在 2010 年起針對數位信號收視不良地區已經建設了 7 個數位改善站，預計 2011 年底前會陸續有 34 站，2012 年有 9 站會在關閉類比信號前完成，屆時數位無線電視的電波涵蓋率將達 96.7%。同時為了照顧弱勢國民之收視權益，我國亦由政府補助全國約 12 萬戶之低收入戶免費裝設高畫質之數位機上盒。而且為了避免原收視類比信號之民眾因為數位轉換後突然的收訊中斷衝擊，我國亦從今年 7 月起陸續從設立專屬網站、成立服務中心、電視跑馬燈、廣告片以及親至各地辦理宣導活動等多管齊下，全力提高民眾認知並預作準備，以減少民怨。

這些攸關民眾權益的積極作為在論壇上發表，對於各方面相對仍處起步階段的主辦國「新新興國家」蒙古而言，確實是大開了眼界，因此獲致其羨慕與稱許並不偶然，謂對其即將進行之數位化規劃與實施工作有極大助益。然而對於收視權益的重視，不但我國如此，先進的日本、韓國亦皆如是，尤其日本已於 2011 年 7 月成功的完成了包含有線電視的全面數位轉換，而卻僅造成 29 萬數位難民（千分之 2.28）之成功經驗，是我國在宣導工作上的最佳參考典範。

本次論壇除了正式簡報之外，其他場合裡我方亦與各國代表有良好而密切的互動，例如即將於 2012 年 12 月完成數位轉換之韓國，因為地形多山，遭遇與我國相同的偏鄉涵蓋率困境，因此在此一議題上有深入的意見交流，日本代表則因為得知我方已與蒙古 CRC 簽了 MOU，藉機亦表達欲與我方簽訂類似 MOU 之強烈意願；而 DVB 主席 Dr. Helmut Stein 得知我國已將 DVB-T2 標準納入數位無線電視技術規範，感到相當欣慰並對我國的進步留下深刻印象。這些寶貴的交流互動，在我國外交處境下誠屬難能可貴，爰此，建議我國對於類似國際論壇應積極參與，提升我國際能見度並同時汲取他國寶貴經驗，增進相關政策規劃與實施之能力。

附錄

COMMUNICATIONS REGULATORY COMMISSION OF MONGOLIA

G.Uyanga
Officer
Justice, Information and Administration Department

CRC Establishment

Independent Mongolian Government regulatory agency (The Communications Act of 2001)

Employees-58

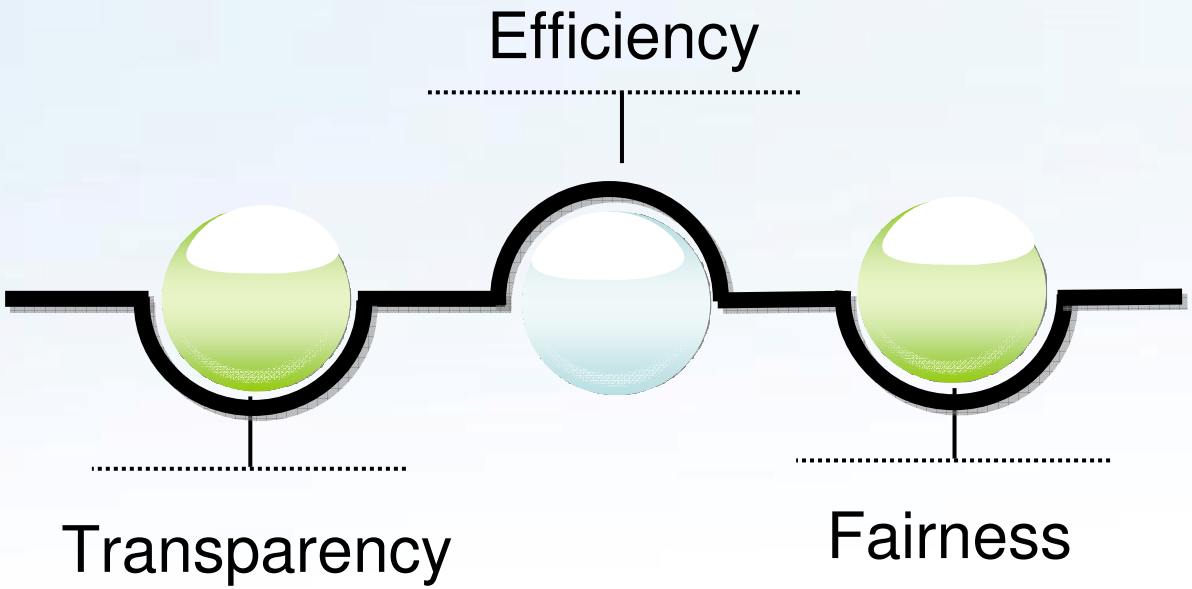
11% Ph.D

53 % Master degree

Mission

To advance the development of ICT, communication and broadcasting in Mongolia to make it an efficient, competitive and less intervened communications sector which meets the need of the Mongolian people.

Our Values



Main objectives /1/

- To facilitate access to safe, reliable and affordable ICT and Broadcasting networks and services by pursuing, where appropriate, a commercially viable and competitive environment;
- To support innovation and expansion in ICT and television, radio, and satellite transmissions by the efficient and impartial oversight of network and service providers and the enforcement of their obligations.
- To protect the interests of users of networks and services in the sector.

Main objectives /2/

- To Increase teledensity and access to ICT and Telecommunications service at affordable price,
- To establish an interconnection regime that allows fair, transparent, prompt and equitable interconnection,
- To re-balance tariffs so that the objectives of affordability and operator viability are met in a consistent manner,
- To protect the interest of consumers and to address general consumer concerns relating to availability, pricing and quality of service and other matters,
- To monitor the quality of service provided by the various operators.

Organizational chart

Chairman

Commissions /6/

- Justice, Information & Administration Department
- Radio Frequency Regulation & Monitoring
- Regulatory Department
- Market and Tariff Regulation Department
- Postal Regulation Department

Justice, Information and Administration Department

- •General counsel and legal advisory
- • Consumer protection
- • Investigations team,
- • Compliance
- • Complaints and dispute resolution,
- • Public relations
- •Administration,
- • Finance
- • International cooperation
- • Human resource and training
- • IT and website management.

Radio Frequency Regulation and Monitoring Department

- Radio frequency spectrum planning
- Technical analysis
- Radio frequency allocation and management
- Radio frequency monitoring and inspections
- Radio frequency utilization licensing and broadcasting

Regulatory Department

- Licensing
- Development of standards
- Technical aspects of interconnection
- Numbering assignments
- Technical requirements and Internet affairs

Market and Tariff Regulation Department

- Market strategy analysis
- Market research statistics
- Competition and network access
- Tariff
- Interconnection

Postal Regulation Department

- International, domestic postal and parcel service licensing and regulation,
- Interconnection
- Define reserved areas of postal service and USP
- Postal zip code assignment and regulation

Law and regulation

The CRC's regulatory functions are subject to the following laws and regulations:

- Law on Communications
- Law on Radio wave
- Law on Post
- Law on Licensing business activities
- Law on Prohibiting Unfair competition
- Law on Governments' Special fund and etc.,

International Cooperation

The CRC represents a regulatory authority of Mongolia in the international are namely in the ITU and APT etc. (ITU Member-1964)

Asia-Pacific Economic Cooperation

Implementing activities

- National Program of Digital migration on Radio and TV Broadcasting
- National Spectrum Management system project
- National Broadband Program
- E-Government
- E-Mongolia Program
- Information and communications infrastructure development project

The planned activities near in the future

- Mongolian national frequency monitoring and Security system project
- License regulation project
- Digital migration on the Radio broadcasting technology
- Soum center internet services (SCI)

Thank you!

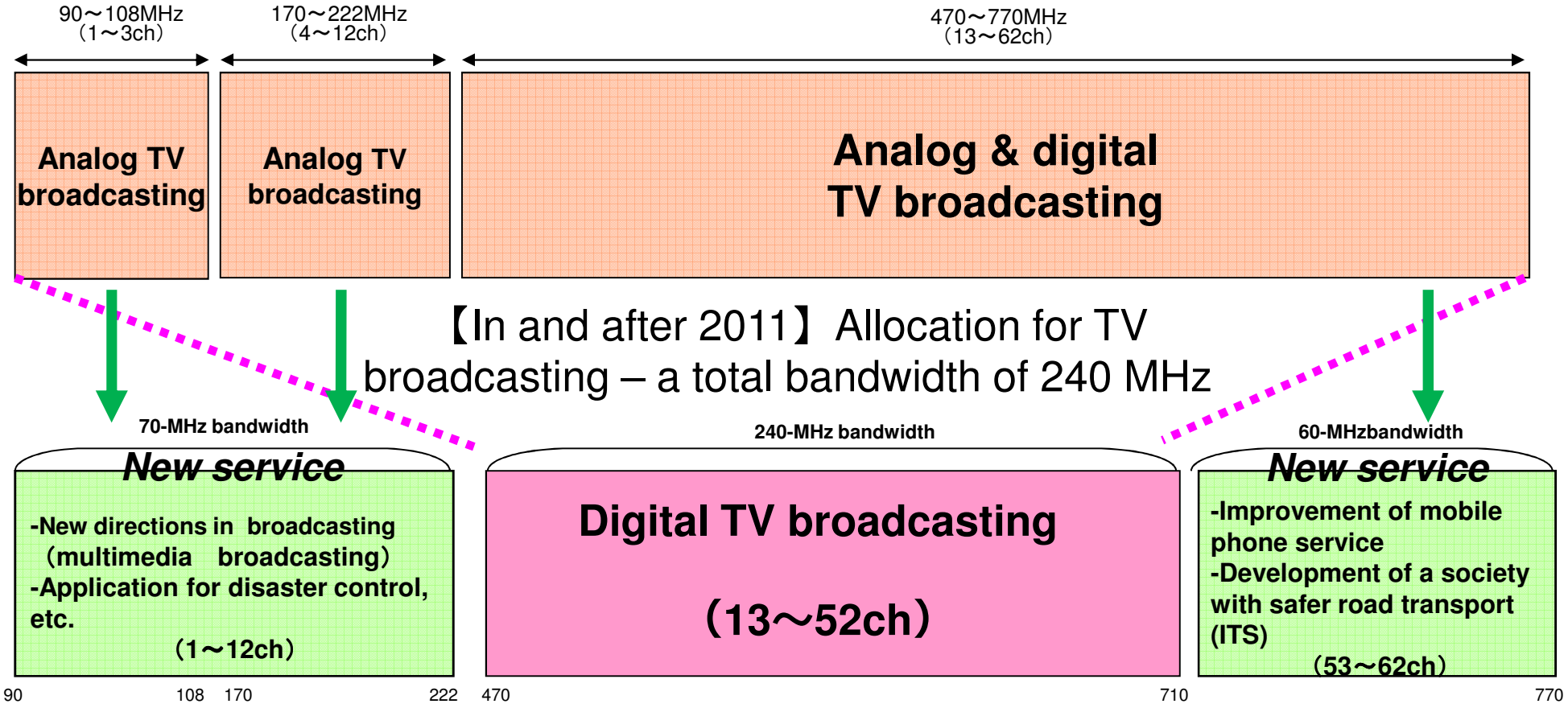
Digitalization of Broadcasting ant its future in Japan

Masanori Kondo
Director, International Economic Affairs
Ministry of Internal Affairs and Communications
Japan

Background of the digitalization

Why digitalization is necessary; Effective use of radio waves

【Current state of frequency utilization】 Allocation for TV broadcasting - a total bandwidth of 370 MHz



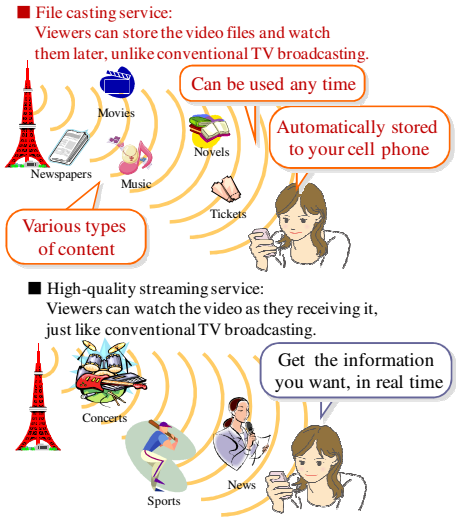
New Service to be Realized by Utilizing Released Frequencies

Applications for disaster control

☐ A mobile broadband communications system is essential for building a safe and secure society

- Video information of accident/disaster affected sites (Afflicted area/shelter ⇔ Disaster control headquarters)
- Video information and data on status of emergency patients (Ambulance/emergency sites ⇔Hospital & doctor)
- Information/data necessary for organizing action at an emergency site (Disaster control headquarters ⇔ Site/ vehicles)

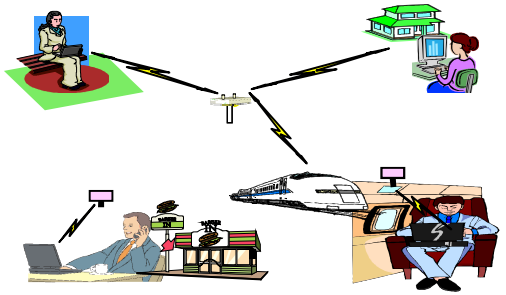
New directions in multimedia broadcasting



☐ New types of broadcasting will deliver various information to mobile devices

- Enable users to watch TV "anytime, anywhere"
- Ensure users receive disaster-related information at a time of disaster
- Realize transmissions of detailed information specific to a local community

Improvement of mobile phone services

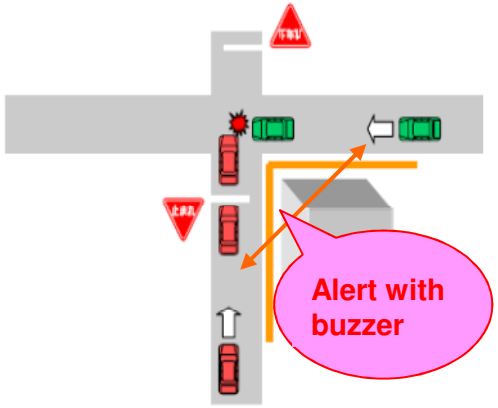


☐ Adapting to frequency needs for the growing number of mobile phones

- Enable more people to use more phones
- Realize advanced functions such as mass data transmission, etc.

Thus, making mobile phones even more useful

Development of a society with safer road transport (ITS)



☐ Allocating necessary bandwidth for a head-on collision prevention system

- Prevent collisions at corners with poor visibility, etc. (vehicle-to-vehicle communication)
- Prevent rear-end collisions by receiving information from roadside units, etc. (Roadway-to-vehicle communication)

Thus, making traffic accidents more avoidable

Realizing a safer and more convenient lifestyle!

Overview of the time schedule

July 2001	Through amendment to the Radio Law, the date of the termination of analog and full transition to digital broadcasting was determined to be July 24, 2011
December 1, 2003	Digital terrestrial broadcasting was launched in the three largest metropolitan areas
April 1, 2006	One-segment broadcasting service began
December 1, 2006	Digital terrestrial broadcasting expanded to nationwide
July 24, 2011	Complete termination of analog broadcasting

5 Success Tips

1

Preparation of Consultation offices close to citizens

working together with the government, broadcasters, manufacturers and electricians

Promotional Scheme for the Complete Switchover to Digital Broadcasting

General Headquarters for Digital Terrestrial Broadcasting, MIC

Established: September 6, 2007 [MIC]
Organization: Headed by the MIC Minister and involving all MIC executive offices and related divisions
Objective: To promote comprehensive and systematic measures as the ministry in charge, in the final stage towards the complete migration to digital terrestrial broadcasting

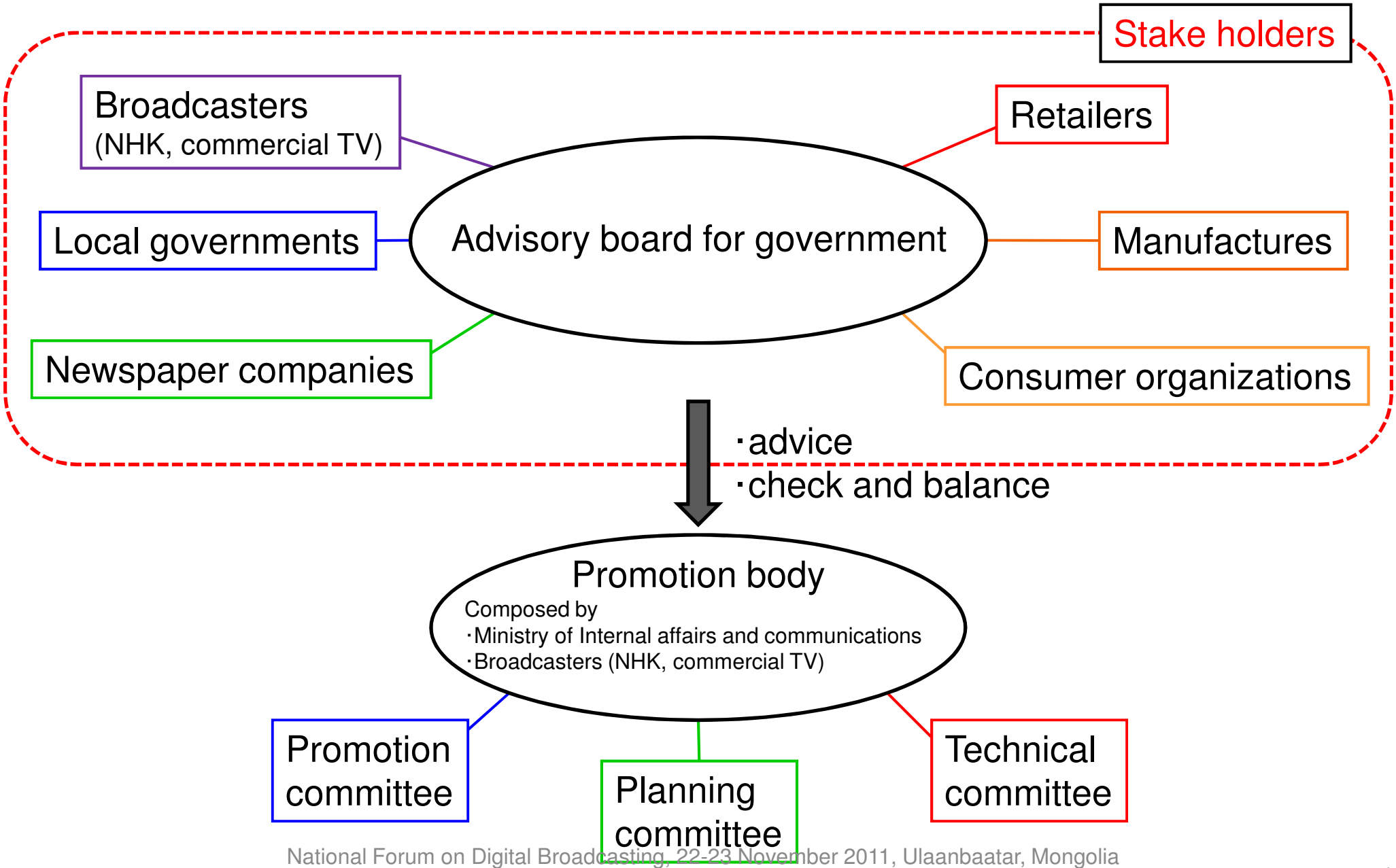
Inter-Ministerial/Agency Liaison Meeting for the Complete Migration to Digital Broadcasting

Established: September 26, 2007 [the Cabinet Secretariat]
Organization: Chaired by the Councilor of the Cabinet Secretariat (attached to the Assistant Chief Cabinet Secretary), involving all related ministries and agencies
Objective: To enhance cooperation across the ministries and agencies concerned in order to facilitate smooth transition to digital broadcasting, giving due consideration to the termination of analog broadcasting by July 2011 as digital terrestrial broadcasting moves into full operation

The Terrestrial Digital Broadcasting National Movement Headquarters

Established: July 24, 2008
Organization: Headed by the MIC Minister, involving broadcasters, manufacturers, retailers, economic organizations, consumer/elderly associations, local governments, and other related groups.
Objective: To accelerate and promote the digital switchover from the perspective of the general public by forming a national movement that unites all the related parties, including thorough education consultations, and assistance to community-level efforts

National Organization for migration



Method of Effective Preparation of Receiving Side

Purpose: DTTB support center established in nationwide by MIC
for publicity and advisement of DTTB
Overview: Variety of support toward migration
The main participating organizations:
Local government, Constructor, Retailer, Broadcasters

(1) Explanation, Provision of information
Explanatory meeting, publicity and publication
(especially Elderly people, Low-income earner)

(2) Survey and measurement of receive condition of radio wave
Survey and Provision of information of receive condition
by radio measurement vehicle

(3) Responding to queries how to receive
Individual reception conference in nationwide (call center)

Method of Effective Preparation of Receiving Side

(1) Explanatory meeting

(2) Radio measurement vehicle

(3) Call center

“Rapid radio measurement”
Blue road indicates “recieve condition is good”

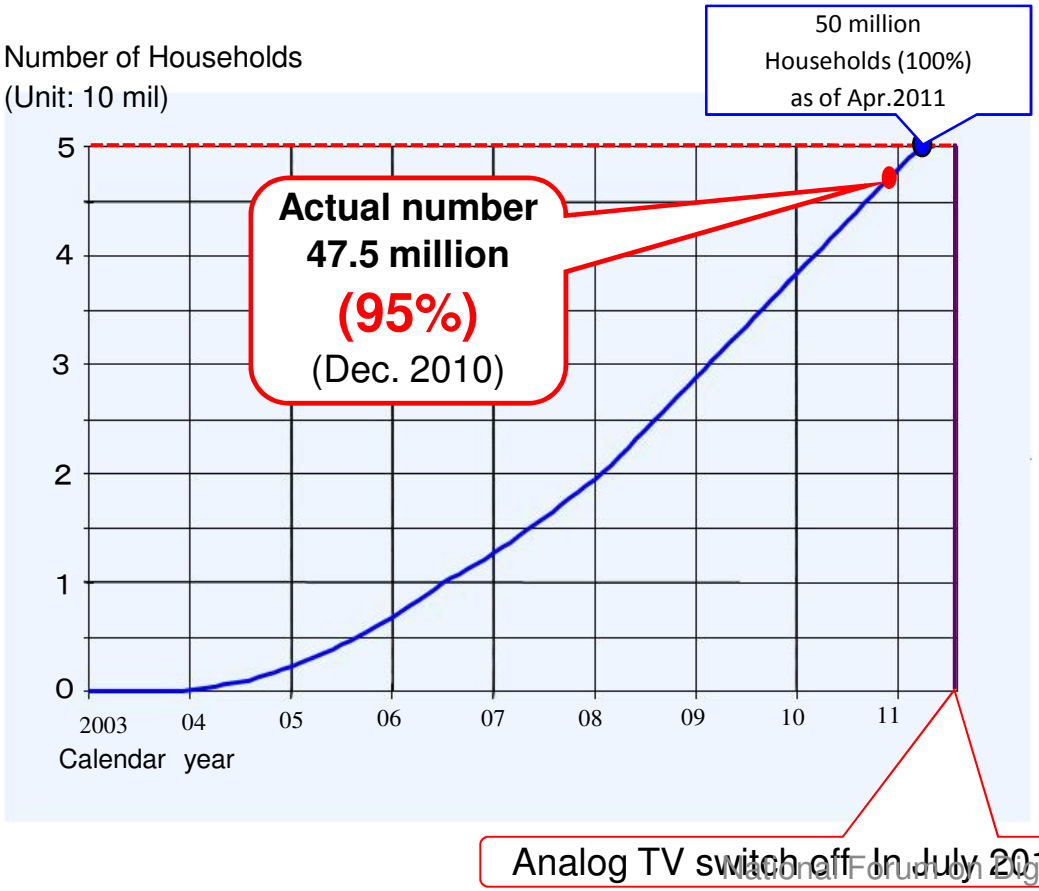
2

Implementation of measures along with a schedule and target

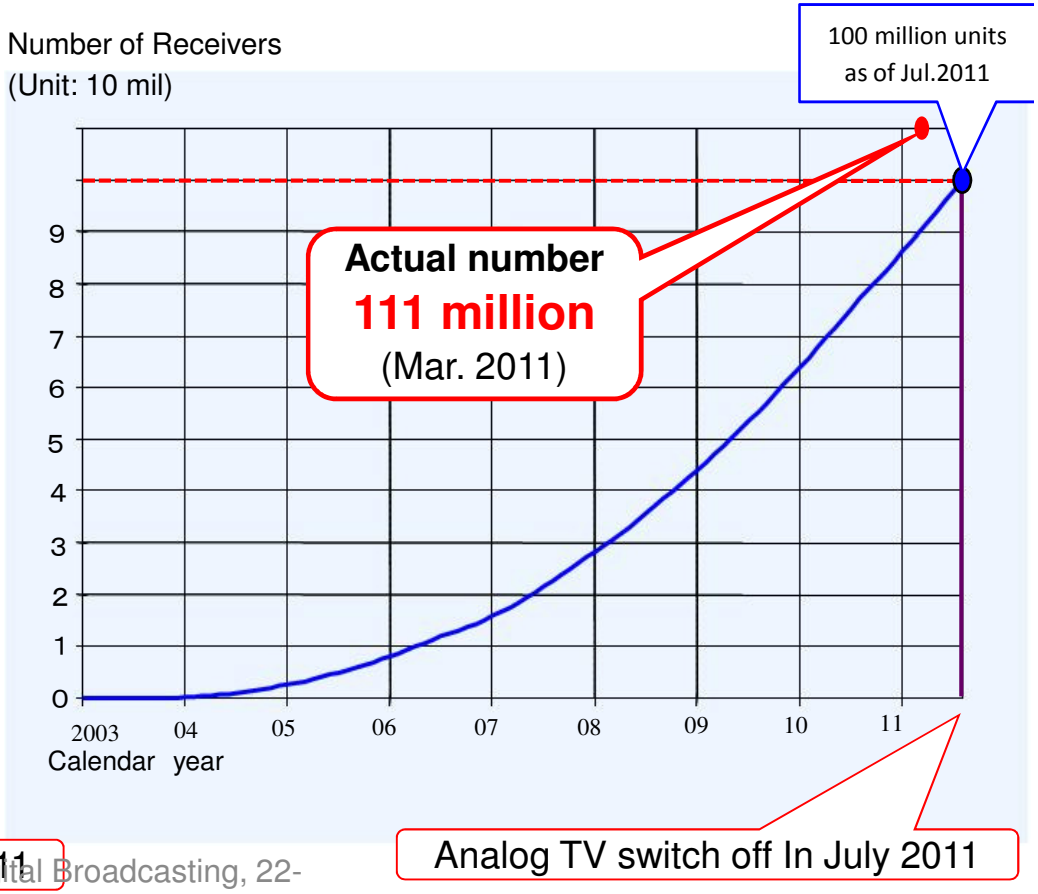
reference Digital TV Dissemination Status in Japan

Digital TV Dissemination is progressing steadily along with the target in Japan !!

Dissemination in Households



Dissemination of Receivers



3

Measures for the spread of digital receivers

4

Public announcements, including statistical results of the digital spread rate and the ASO notification through the analog broadcasting program

Countdown toward Switch-off in Nationwide

Purpose: 1. To make people to prepare toward switch-off
2. To prevent of information shutdown by termination of analog broadcasting

July 2008

"Analog" Logo

➢ Notification in some programs

Letter box, Notification

Sequentially, notification with the letterbox begins on analog program

NHK: From March 29, 2010

Commercial TVs: From April 2010

From July 5, 2010

➢ From January, 2011
Always letter box with notification instrument

Virtual analog switch-off with blue back screen

All broadcasts do virtual analog switch-off at the same time especially prime time.

From July 1, 2011

➢ From July, 2011
Always display day of countdown to termination of analog broadcasting

➢ Notice on normal program

Regularly display
blue back screen or notice program

Noon of July 24, 2011

➢ "Notice" only

July 25, 2011

Analog broadcasting termination

5

Spread of digitalization of Terrestrial Television Broadcasting to citizens by using characters and distinguished persons (Media strategy)

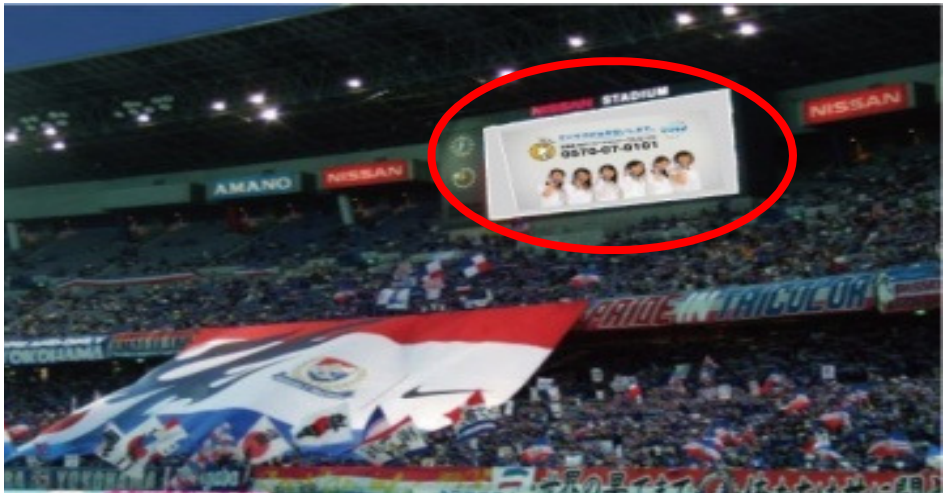
Character goods

CHIDEJIKA:

CHIDEJIKA is a mascot for "Terrestrial Digital TV" campaign in Japan.
"CHIDEJI" means "Terrestrial Digital TV" and "-KA" is the suffix for "-ization".
At the same time, "JIKA" has a meaning of deer in Japanese.
So "CHIDEJI"+"JIKA"="CHIDEJIKA" is a play on words for the campaign symbolized by deer. The shape of horns of CHIDEJIKA looks like antennas.

Famous and distinguished entertainer and popular newsreaders in campaign

Metropolitan train (Yamanote) with promotion train of Digitalization



Professional baseball/football stadiums and horse racing tracks using public viewing systems with huge screens

NATIONAL FORUM ON DIGITAL BROADCASTING
22-23 November 2011
Chinggis Khaan hotel, Ulaanbaatar, Mongolia

An Overview on Digital Broadcasting Transition in Korea

Ulaanbaatar, Mongolia, 22 November 2011

In-Ung HWANG

Assistant Manager of the Global Business Division

RAPA Korea Radio Promotion Association

CONTENTS

Digital Broadcasting Transition

Digital Broadcasting Transition

Digital Broadcasting Transition

- A process of analog switch-off via digitization of the entire broadcasting process including production, transmission and reception

(Digital Broadcasting Transition Special Act Clause 2)

Broadcaster		Viewer
Production	Transmission	Reception

Digital Broadcasting Transition

Viewers

- 5~6 times better video quality than analog TV and CD-like audio quality

Broadcasters

- Securing competitive power via digitization of production and transmission facilities

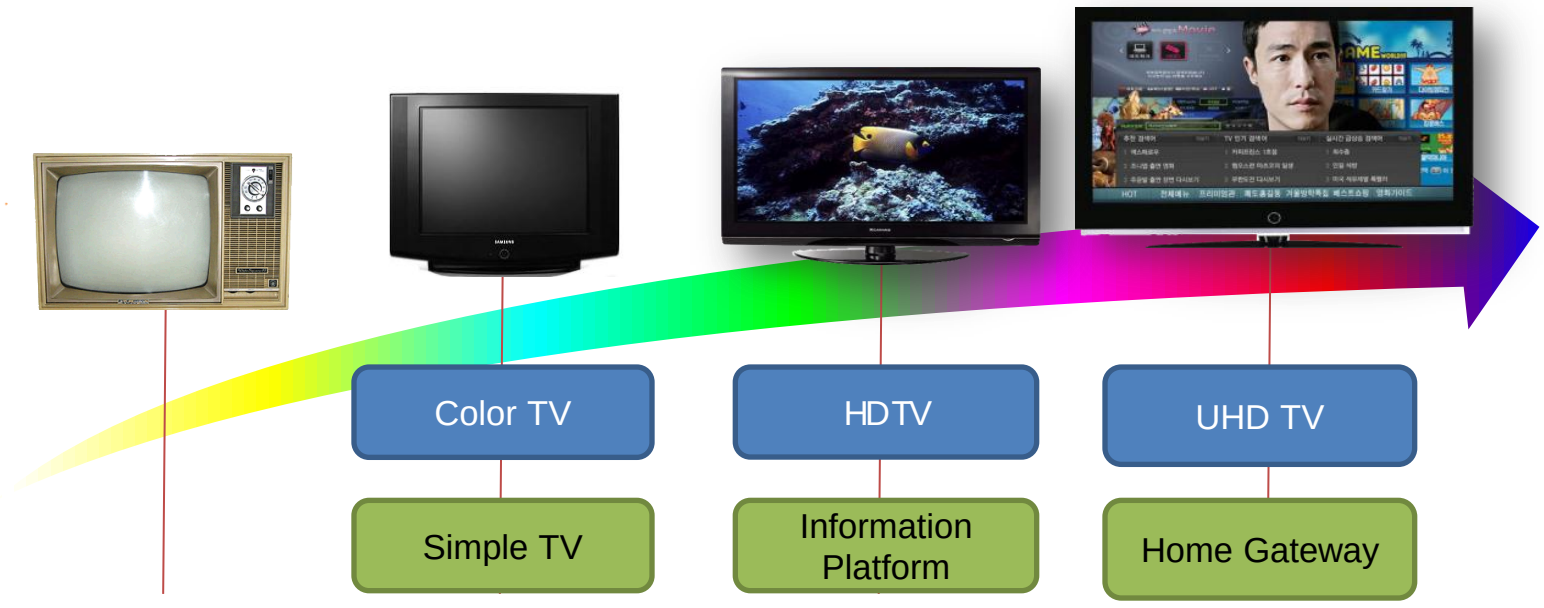
Broadcasting Industry

- Contribution to the national economy by promotion digital broadcasting contents and equipment market

Energy Efficiency

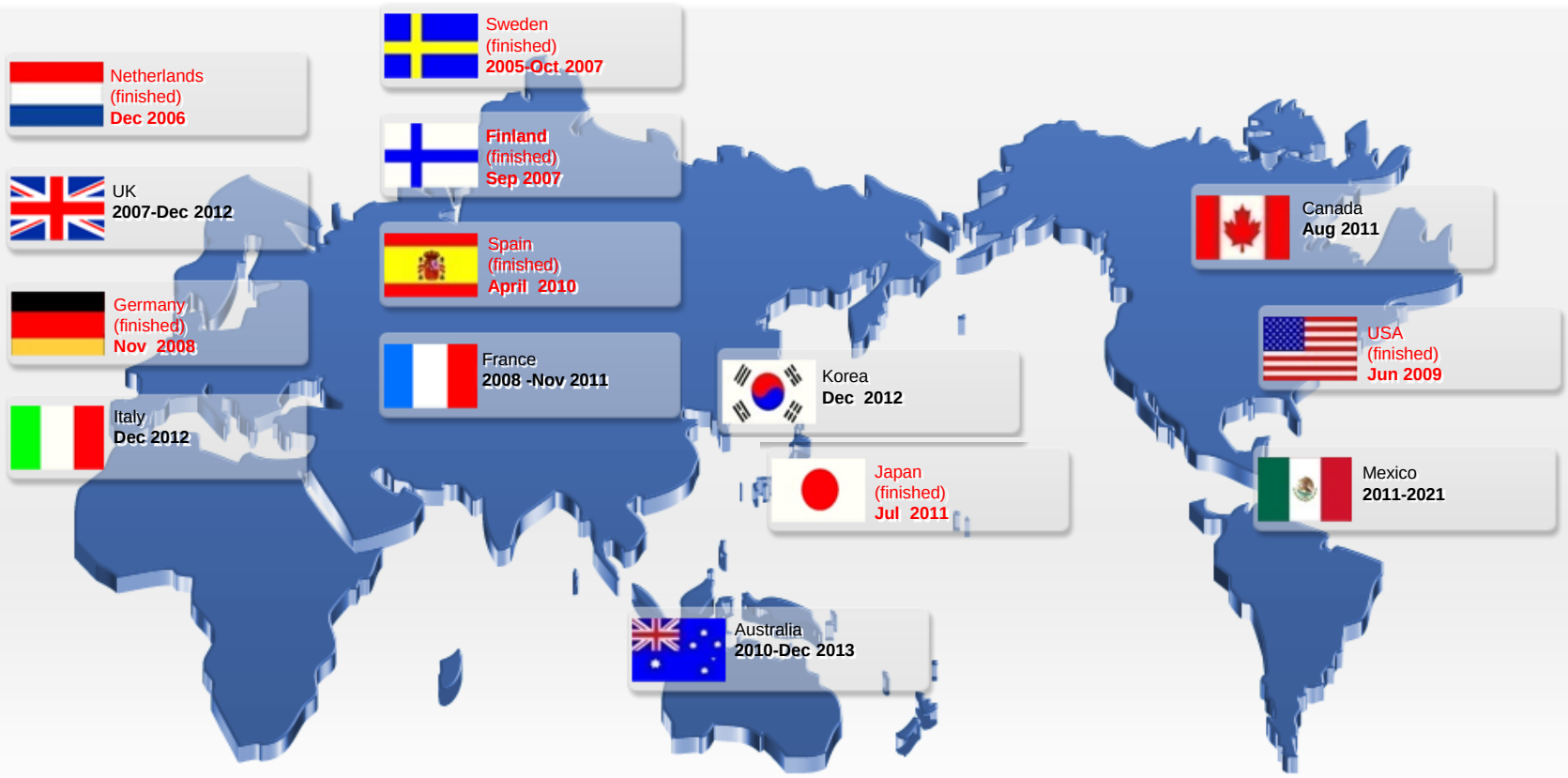
- Contribution to green growth via 60% reduction in the use of broadcasting infrastructure

Digital Broadcasting Transition



Digital Broadcasting Transition

28 out of 33 OECD countries are due to finish digital switchover by 2012



Dec 31, 2012, 4 am - Analog Terrestrial Broadcasting Switch-off

Current Status of Korea

Korean Broadcasting Industry

Terrestrial Broadcasting

- Nationwide Network : KBS1, KBS2, MBC, EBS (4 channels)
- Local Broadcasters : SBS, OBS etc. (11 providers)

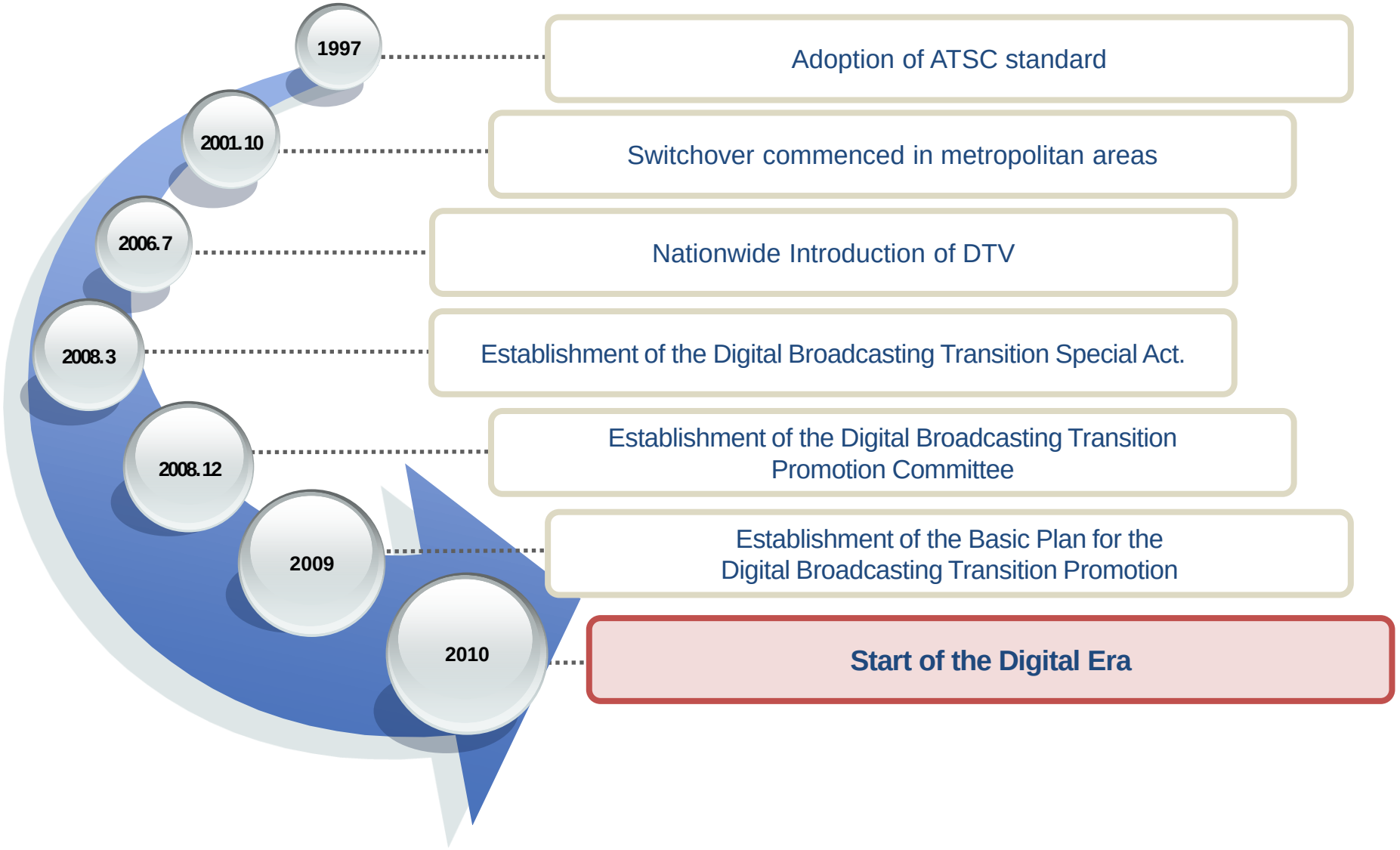
Private Broadcasting

- Local Cable Network : 77 companies
- Satellite Network : Sky Life (1 company, nationwide)
- IPTV : SKT, KT, LGU+ (3 companies)

DMB

- Terrestrial DMB : 6 companies (metropolitan area)
- Satellite DMB : TU Media (nationwide)

Footprints of Digital Broadcasting Transition



The Characteristics of Digital Broadcasting Transition

Simultaneous

- Nationwide Simultaneous ASO (Dec 31, 2012, 4AM)
  - ASOs are planned in trial service areas prior to the nationwide ASO

ASO Help Scheme

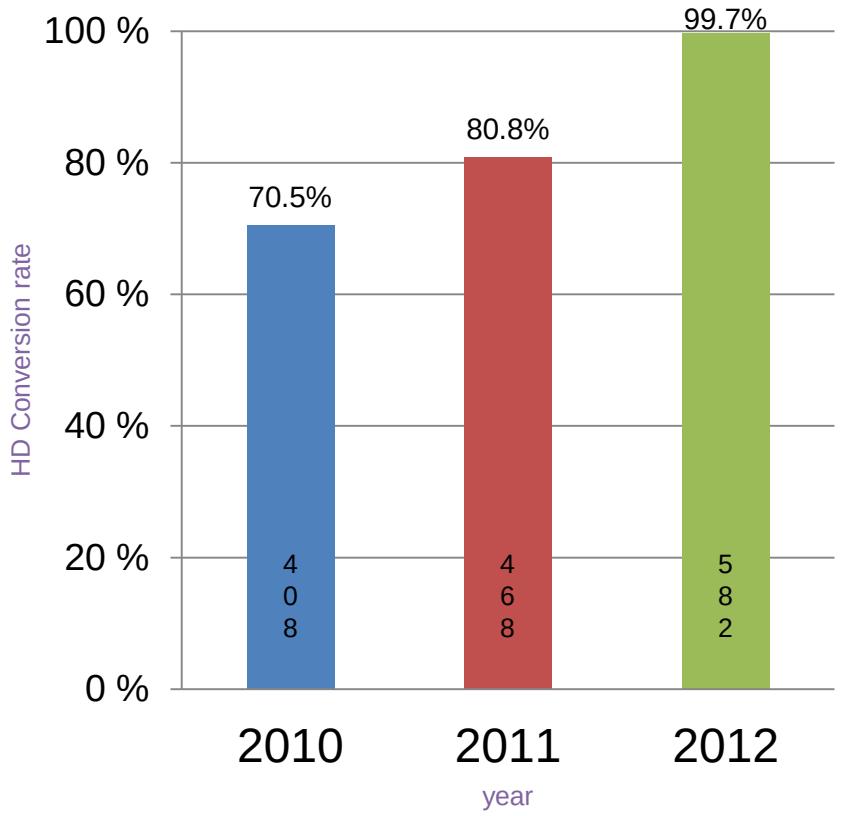
- Government assistance to be provided for vulnerable households who receive analog terrestrial TV service
  - Public relations program for general public with subscription TV service

Broadcasters

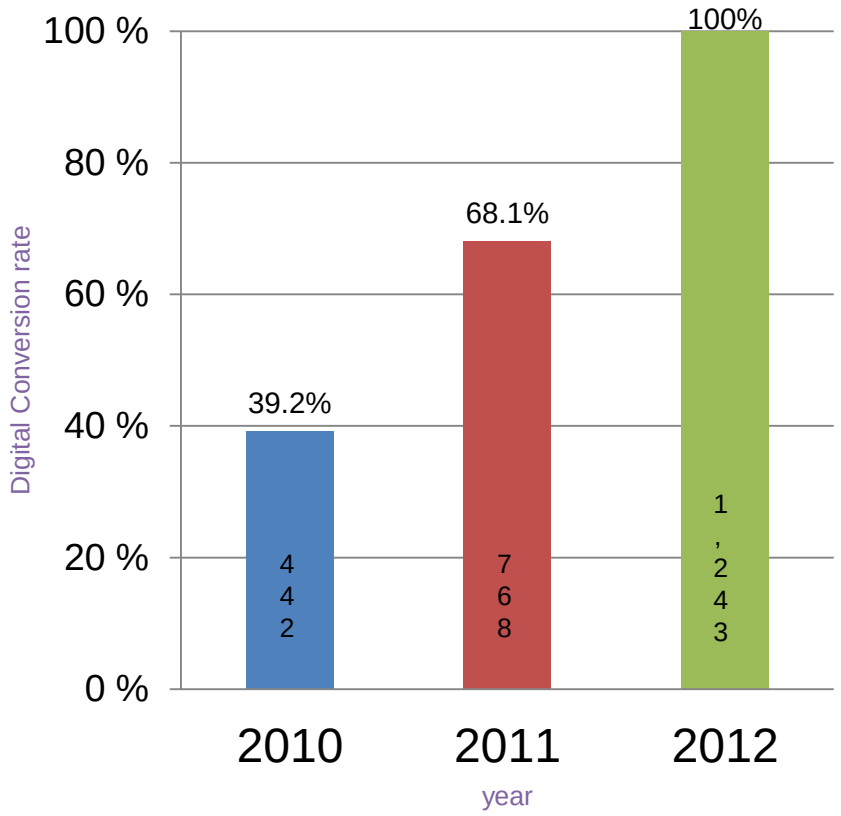
- Terrestrial Broadcasters to terminate analog terrestrial broadcasting
  - CATV (voluntarily), Satellite, TPTV (digitized)

Status of Digital Transition

HD Production Facility

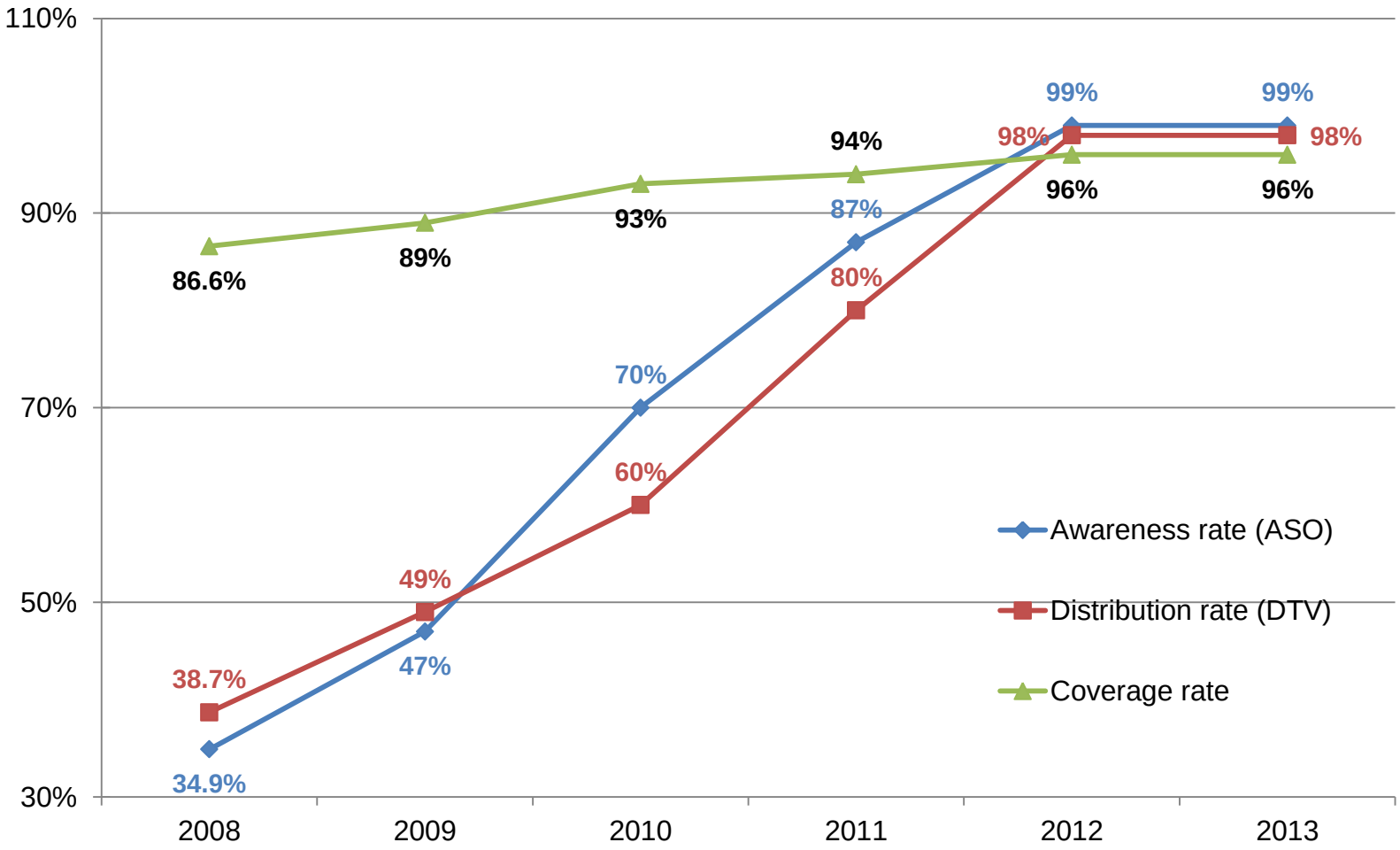


Digitization of Relays (Transmitter)

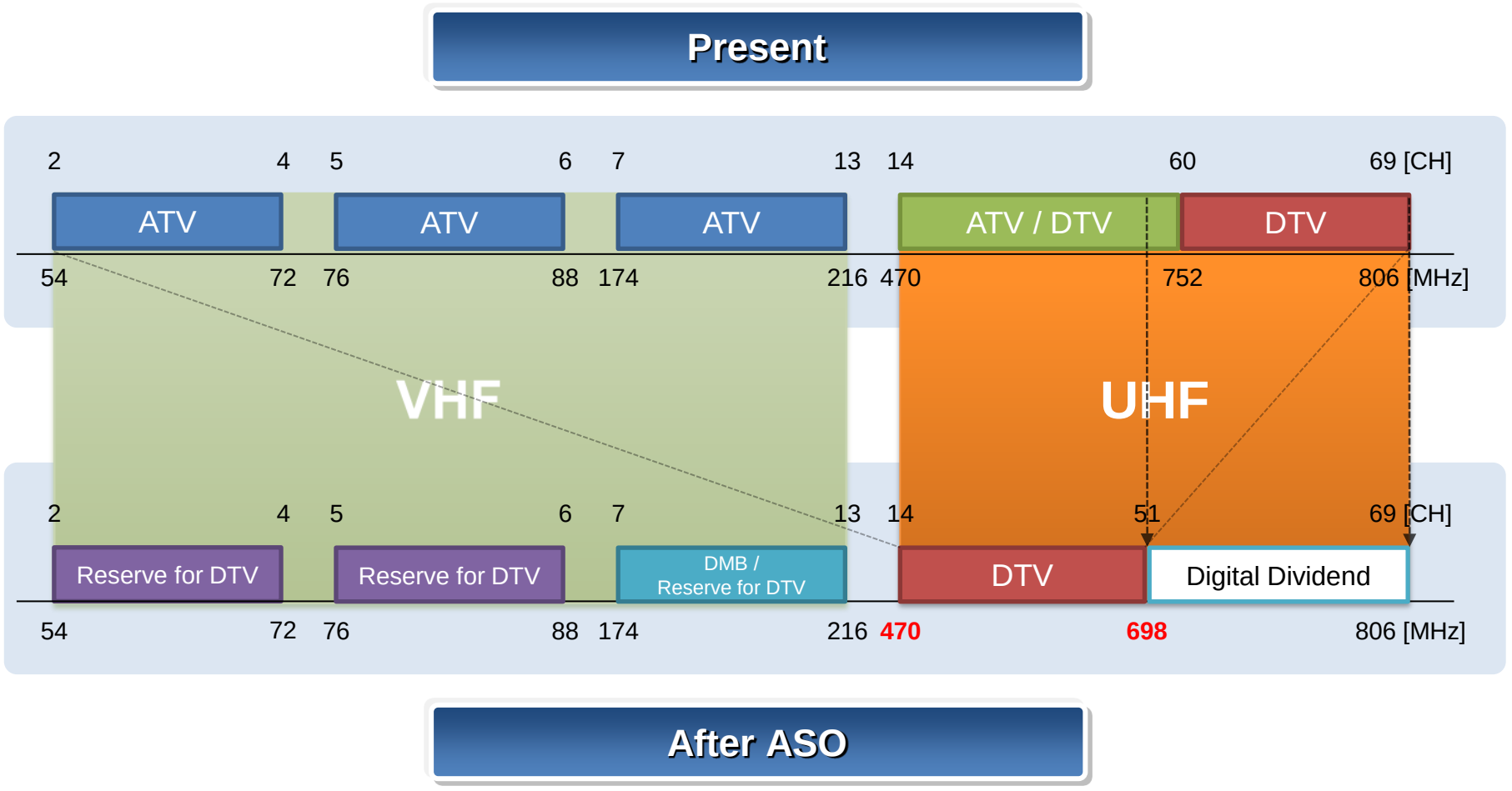


Key Stations (63) were digitized

Awareness & Distribution & Coverage rate

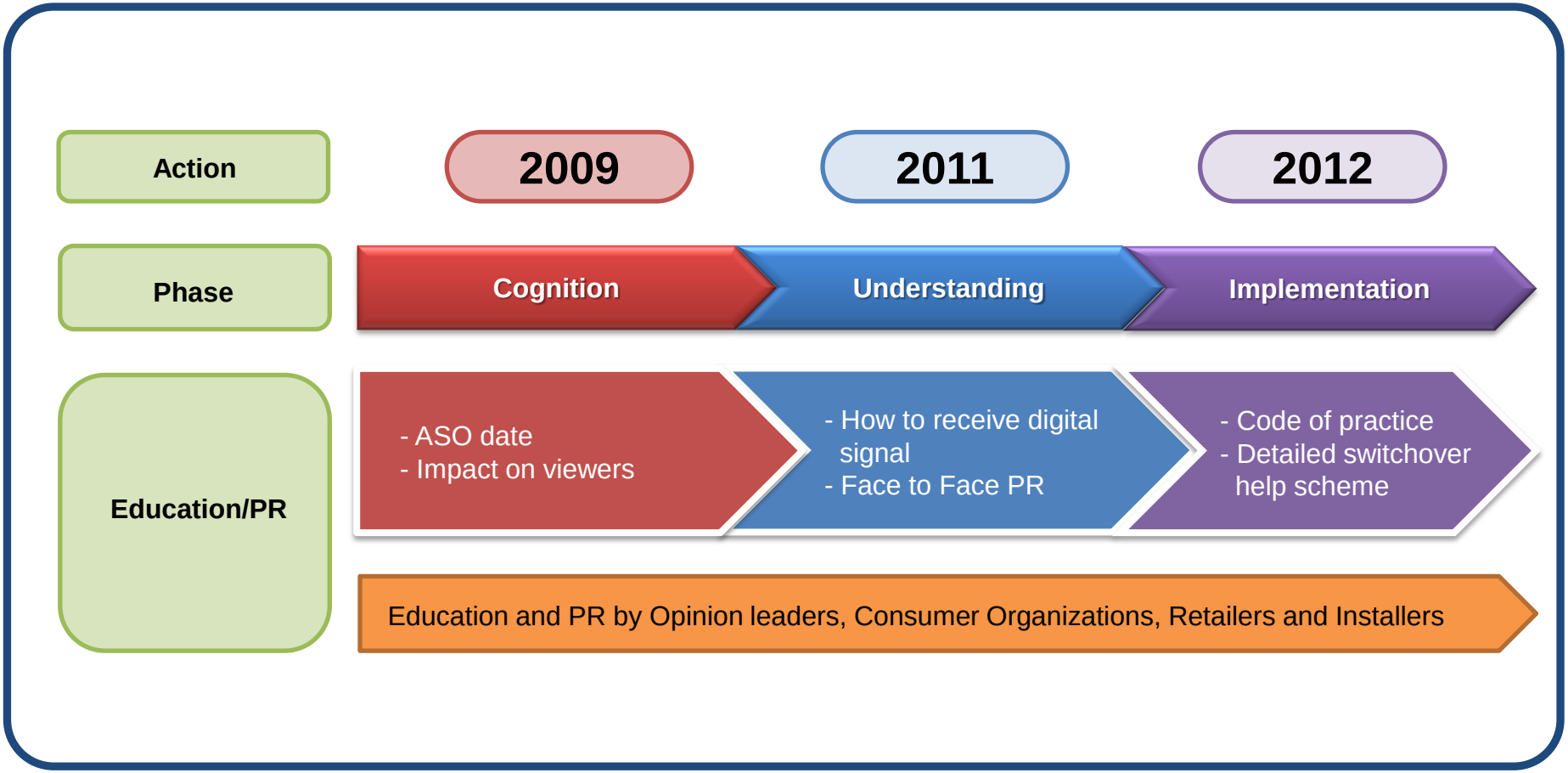


Frequency Reallocation



Public Communication Program

A Systematic Public Communications Program



Public Assistance to Viewers

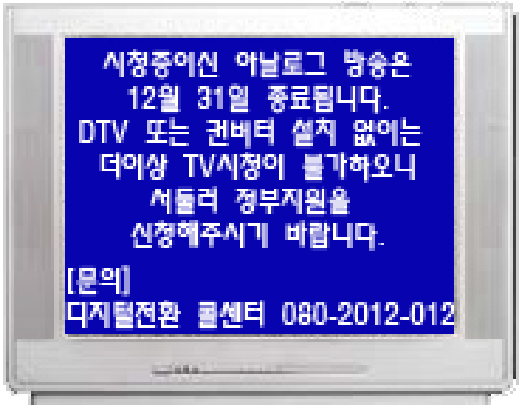
Digital Switchover Promotion Group + 23 viewer assistance centers + Call center at the national level

- Integrated Homepage for Digital Transition (www.dtvkorea.org)
  - Definition of Digital Broadcasting Transition
  - Self Diagnosis
  - Installation Guide, etc.

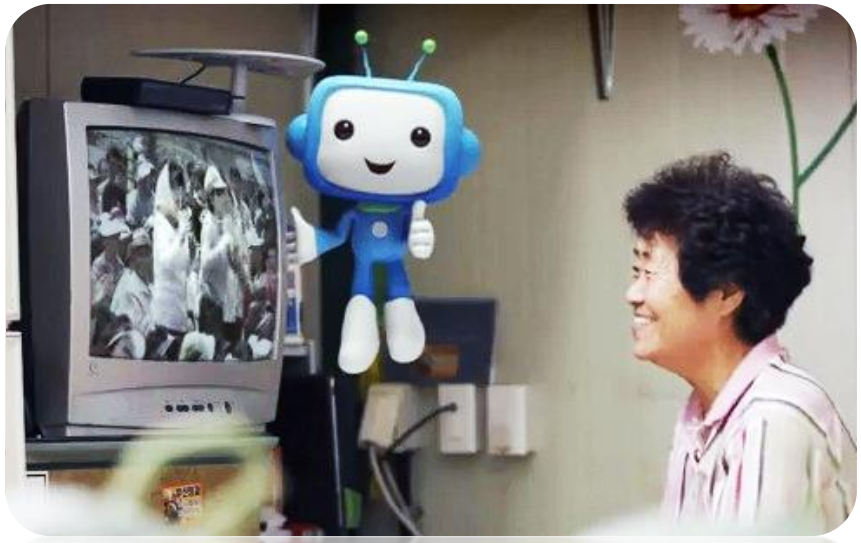
Public Campaign Advertisement

ASO Warning broadcast & Simulated shut-down

- Start on 2012, January gradually
- Divide 9 areas
- After 2012. July, if the Area has 98% distribution rate of digital TV or higher, simulated shut down start



Securing Rights of Vulnerable Viewers



Securing Rights of Vulnerable Viewers

- Following the ASO, the government plans to protect viewer's rights of vulnerable groups
  - Distribution of digital converters and antenna
  - Provision of technical supports upon request of those eligible (2012)
- Both digital convertor and assistive devices for those who are deaf, blind and with presbycusis

(unit : device)

Assistive Device	2010	2011	2012	Total
Subtitling	7,500	15,739	15,869	39,108
Audio Description	5,000	19,073	22,491	46,564
Presbycusis	5,000	23,227	21,779	50,006

ASO Help Scheme

- ASO Help Scheme for Vulnerable Households (2011, 2012)
  - Free digital convertor or DTV purchased grants
  - Replacing Antenna service
- Terrestrial TV viewers (2012)

2011		2012	
Vulnerable Households		Vulnerable Households	Terrestrial TV Viewers
- Digital Convertor (Free) or DTV purchased grants - Replacing Antenna service (Free)		- Digital Convertor (Free) or DTV purchased grants - Replacing Antenna service (Free)	- Digital Convertor (Gov. cover 50%) - Replacing Antenna service (Gov. cover KRW 15,000)

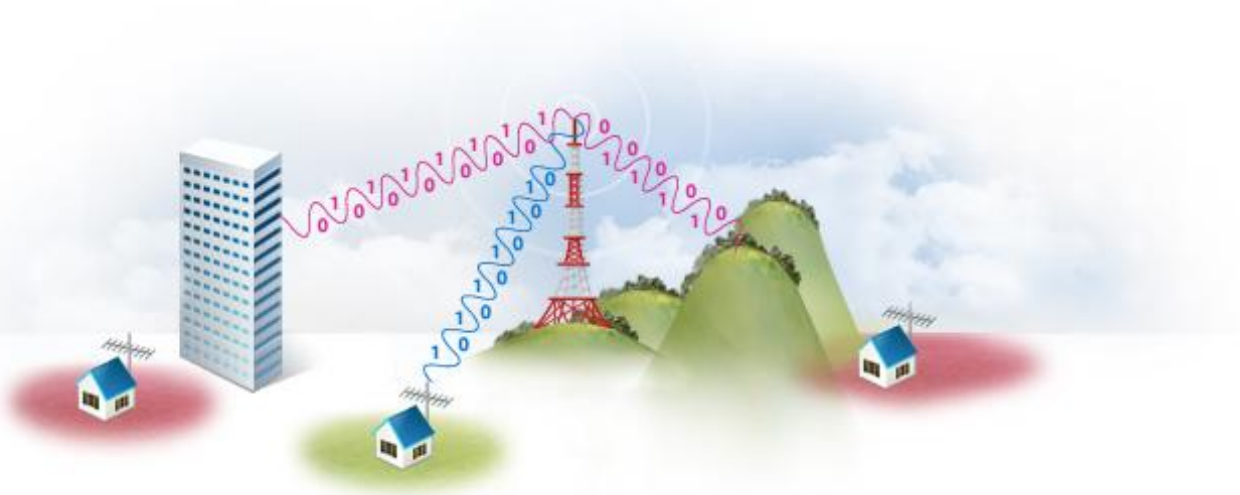
ASO Help Scheme

	Type	Product	Price		Type	Product	Price
For vulnerable Households	Digital Convertor Box		**Free**	Popularized DTV model	③ 81cm(32′) Popularized model	 *U-HAN PRESEN (UHP3201-HD)*	**355,000 KRW (314 USD)**
	① 56cm (22′) For only vulnerable household	 *Samsung Electronics (LN22D450)*	**59,000 KRW (52 USD)**		④ 81cm(32′) Popularized model	 *Daewoo Display (LD32L1B1)*	**390,000 KRW (346 USD)**
	② 58cm (23′) For only vulnerable household	 *LG Electronics (M235IPS)*	**99,000 KRW (88 USD)**		⑤ 106cm(42′) Popularized model	 *Woosung Enterprise (EKA-42BFBU)*	**739,000 KRW (656 USD)**

Government purchased grants 100,000 KRW (89 USD)

www.digitaltv.or.kr

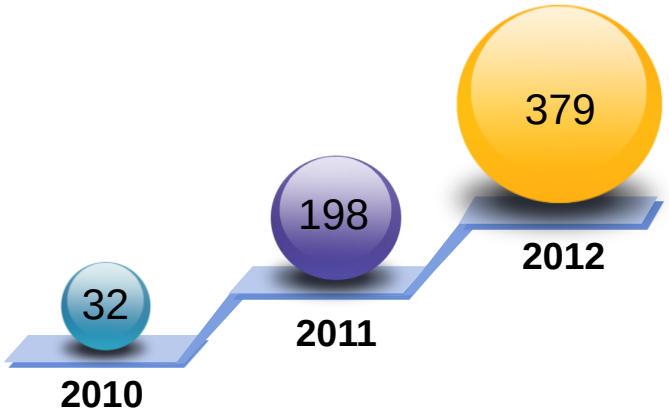
Addressing Poor Reception Problems



Addressing Poor Reception Problems

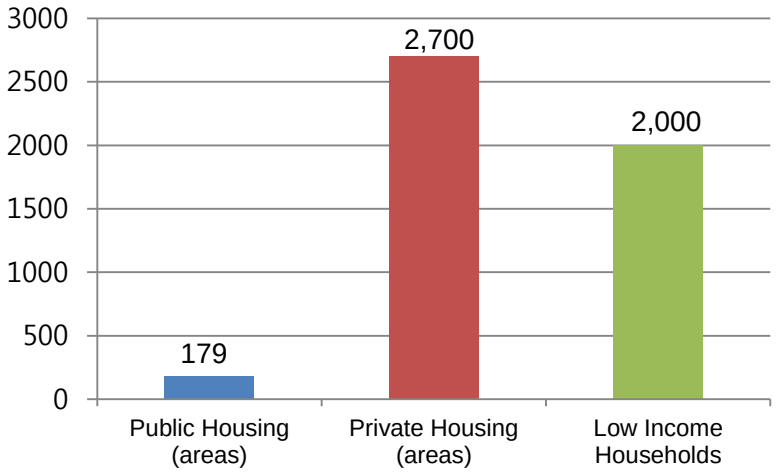
- Securing viewer's rights affected by environments
  - Digitization of analog shared aerials (506 areas)
  - Low Power Equalization On-Channel Repeater and Satellite Broadcasting
- Improving old TV reception facilities for viewer's rights

Addressing Poor Reception Problems

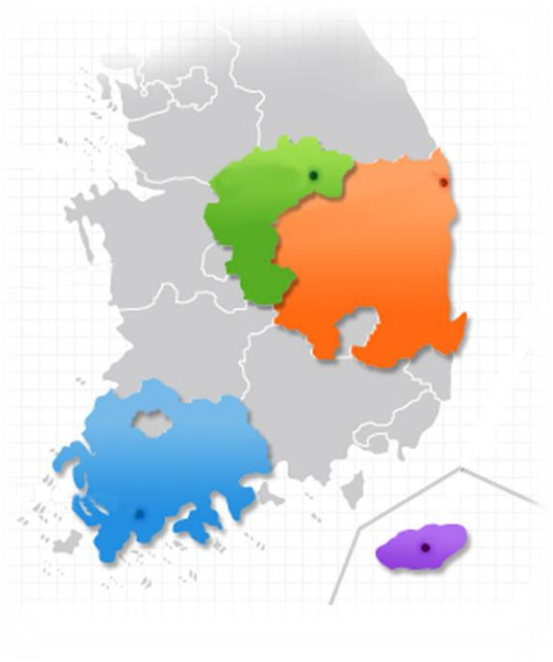


Unit : 1000 households

Improving TV Reception Facilities



Trial Service



Trial Service Areas

Preparing for the switchover help scheme with the experience of trial services

2010 Trial Service Areas

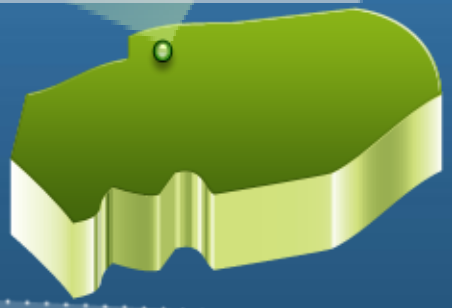
Danyang, Chung-buk
- DTV Started : May 2010
- ASO : Nov 3, 2010

Uljin, Kyoungbuk
- DTV Started : May 2010
- ASO : Sep 1, 2010

Gangjin, Jeonnam
- DTV Started : May 2010
- ASO : Oct 6, 2010

2011 Trial Service Areas

Jejudo
- DTV Started : Sep 2010
- ASO : June 29, 2011, 4 am
- Households : 216,000



Regular broadcasting will be temporarily suspended with subtitle announcement of analog switch-off within Dec 2010

Conclusion

Thank You

RAPA

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