

Broadcasting Policy and Regulation in Transition before the Dawn of a New Paradigm : Comparing Digital Television in Transition between Japan and the U.S.

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Abstract : This study focuses on the transitional period from analog to digital terrestrial television broadcasting and attempts to compare the two cases of Japan and the United States. Japan has historically learned a great deal from the U.S. broadcasting system, and this knowledge has impacted broadcasting policy and its policy-making processes. There are very few in-depth case studies however directly focused on conducting professional interviews on the execution of terrestrial broadcasting policy-making in Japan and the U.S.

To understand the transition to digital terrestrial television broadcasting, it is necessary to understand the historical development of television broadcasting and its related policy as well as policy-making due to the notion that innovation could not be realized in the vacuum of technological development. After comprehending the fundamental television broadcasting system in analog standard, it was inevitable to consider what was desired and with what effects in developing the next generation television system, in this context the digital terrestrial television broadcasting system.

Furthermore, additional concrete questions were raised: (1) What was needed and expected to develop and innovate the next stage of television broadcasting in executing the policy for terrestrial digital television? (2) How was the newly developed and innovated system diffused domestically and internationally? (3) How did the related broadcasting policy and its policy-making processes impact television broadcasters financially and in daily broadcasting operations?

There was a pattern of making alliances in inventing the advanced new technological innovation for the future. At that time the Japanese policy-making pattern could be evaluated as a unified and effective approach initiated by Japan's unique policy-making system, which included elite politicians, bureaucrats and numerous businesses, as a unique and respected system until the late 1980s and early 1990s.

To answer the research questions this study utilizes in-depth interviews with individual broadcasters both in Japan and the U.S. The research tries to find out how, under the changing media landscape in the age of the Internet, the most up-to-date case of broadcasting public policy and its execution concerning terrestrial digital television broadcasting operations would be understood by the terrestrial television broadcasters both in Japan and the U.S. Interestingly, by comparing broadcast policy and the relevant policy-making processes between Japan and the U.S., it was discovered that the free marketplace trend, referring to the laissez-faire approach, was limited in the U.S. and a similar approach to the Japanese industrialized policy-making would finally be adopted. Digital terrestrial television policy and its policy-making might be an exceptional case but it would be the last public policy-making made before the dawn of a new broadcasting regulation period in the age of Internet. Comparatively tight regulations

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in Japan and an exceptional case in the U.S. showed that all broadcasters accustomed to the free marketplace philosophy would to some extent face tight government control. (460 words)

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Introduction

New technology became a truly focused factor in seeking the next generation of communication back in the 1980s. During that time period, highly advanced countries and the unique regional union in broadcasting and electronic media, such as the ones in the U.S., Europe, and Japan started their unique approach from the satellite broadcasting route.

Technologically the main reason for all advanced entities to focus on the satellite broadcasting was that high-quality broadcasting services needed more band-width to broadcast or transmit a great amount of audio and video data. In the 1980s the analog terrestrial broadcasting route as well as the analog cable broadcasting route were unable to broadcast or transmit high quality voice and images. The only way to overcome this hurdle was to develop and utilize a satellite broadcasting route.

The U.S. cable broadcasting industry at that time utilized a C band-based satellite transmission route to receive audio and video from program providers; however, these were not passed directly to the homes with cable capability. Of course, at that time it was not possible to send television program signals directly to the television households from the geosynchronous orbit, 22,300 miles above the equator by utilizing the 100 watt-powered satellite, which is the basic notion of defining the DBS (Direct Broadcast Satellite) service.

Instead Japan head-started the DBS project, which was launched for developing already in 1960s. This was initiated by President Yoshinori Maeda (term of office: 1964-1973) of Japan Broadcasting Corporation (*Nippon Hoso Kyokai* = NHK). In the middle of the Cold War, President Maeda believed that Japan should occupy a distinguished and outstanding position as a country being located between the two super powers; the Union of Soviet Socialist Republics (USSR) and the United States of America (USA).

Toward the end of the Cold War in the late 1980s one side of the two super-powered countries, the U.S. had started preparing for developing the advanced television broadcasting and related high definition television sets. Looking back to the broadcasting history while Japan initiated the experimental DBS system in the 1980s the U.S. launched a U.S. version of the DBS system in the 1990s followed by Japan. Considering the industrial relationship between Japan and the U.S. at that time, Japan finally exceeded the level of quality of television and established the next generation of distinguished broadcasting. However, at the dawn of the era of digitized media convergence, the U.S. started moving toward adopting a conventional terrestrial television broadcasting path in realizing the advanced television of the U.S., which was called Digital Television (DTV).

This study focuses on the transitional period from analog to digital terrestrial television broadcasting and tries to compare two cases such as the one in Japan and the other in the U.S. Japan has historically learned a great deal from and by following the U.S. broadcasting system, which had a significant impact on Japanese broadcasting policy and its policy-making processes. There are very few in-depth case studies available directly conducting professional interviews in executing terrestrial broadcasting policy-making in Japan and the U.S.

In the period of making a transition from analog to digital broadcasting system in Japan and the U.S.,

the two countries basically seemed to have shared some common strategies in developing the next generation of terrestrial television system and television reception receivers, or digital television sets. This article mainly deals with terrestrial television broadcasters and sometimes related personnel in government and business, being asked how they managed the digital television transition from the aspect of replacing equipment and reinventing stations' operations and management systems.

To understand the digital terrestrial television broadcasting in transition, it is necessary to understand the historical development of advanced television broadcasting and its related policy as well as policy-making due to the notion that innovation could not be realized in the vacuum of technological development. In this sense, it was inevitable to consider what was desired with what effects in developing the next generation of television system, in this context digital terrestrial television broadcasting system in Japan and the U.S.

Furthermore, additional concrete questions were raised: (1) What was needed and expected to develop and innovate the next stage of television broadcasting in executing the policy for the terrestrial digital television; (2) How the newly developed and innovated system was diffused domestically and internationally; and (3) How the related broadcasting policy and its policy-making processes - impacted television broadcasters financially and daily broadcasting operations.

To answer these research questions this study utilizes in-depth interviews of individual broadcasters both in Japan and the U.S. during the transitional period to fully digitized television broadcasting system. The research tries to find that under the changing media landscape in the age of Internet how the most updated case of public policy and its execution concerning the terrestrial digital television broadcasting operations could be understood by the terrestrial television broadcasters both in Japan and the U.S.

I. Broadcast Policy and DTV Transition in Japan and the U.S.

Each country has her own original communication policy formation process based on the interactions among important stake holders. This was generally pointed out by Browne (1999) from the comparative media systems stand point that each country's media system is unique and its significance of comparing media systems between and among countries is to lead to the essence of excellency in each media system in the world to seek better media systems further on.¹ In the next section the two countries' background of broadcast policy, such as regulatory policies of broadcasting will be reviewed.

U.S. Broadcasting Regulation and DTV Transition

Representing the regulatory body of the U.S. is the Federal Communications Commission (FCC), which is an independent agency created based on the Telecommunications Act of 1934. Since 1934, the FCC is supposed to direct all the broadcasting stations to serve the "public interest, convenience and necessity".² The Communication Act of 1934 was enacted following the election of President Franklin D. Roosevelt in 1933. At that time, a change was made by the President from the current number of five commissioners to an appointed group of seven commissioners, although it is currently comprised of five members, "by and with the advice and consent of the Senate."³

The basic framework of the FCC was maintained for quite a long time but by 1996 and the advent of the U.S. version of advanced television, the DTV framework was newly regulated by the Telecommunications Act of 1996. This resulted in a comprehensive amendment of the 1934 Act. The Telecommunications Act of 1996 focused on the technology shift by looking for the digital society in the future and at the same time showed the policy approach shift while still strongly embracing the

contradictive issues for the public interest.⁴ Another point of view on the Telecommunications Act of 1996 is that the Act gave old legacy media officials approval, or public trusteeship. In other words, the Telecommunications Act of 1996 entrusted broadcasters with the advanced broadcasting for the U.S. by utilizing a new spectrum to realize DTV.⁵

Generally, the Telecommunications Act of 1996 is said to be a symbol of digital society by allowing broadcasters to have more deregulation spirit, but regarding the DTV transition from analog terrestrial television broadcasting the conventional regulatory framework was inherited. In this regard, even though the Telecommunications Act of 1996 generated large incentives especially with deregulating media ownership rules, whose biggest change is permitting the cross ownership of broadcast and cable systems, for many terrestrial television broadcasters in the U.S. no specific incentives were felt by the conventional television broadcasters.

Therefore, it seems that the fundamental belief for television broadcasters was not changed based on the notion that broadcasters were treated as public trustees of the airwaves, and at the same time it meant that broadcasters' spectrum rights would be taken out if broadcasters did not perform in the public interest.

Slotten (2000) pointed out that a clearer understanding of the early role of the federal government over the broadcast industry could promote a better understanding of the current problem and emphasized the importance of associational and cooperative activities between government and industry which were important in developing broadcasting in the U.S.⁶ Slotten also emphasized the significance of the broad approach trying to make a bridge an important gap between historical researches on technology and science, which means that earlier policies and traditional themes remain highly relevant to the current policy situation⁷.

One related point of argument is that the government has kept an interest by regulating broadcasters via supervising airwaves, but a unique current situation refers that terrestrial television spectrum became highly valuable, like real estate, particularly for the use of the wireless telecommunication business.⁸ This factor would give conventional terrestrial television broadcasters an impression that making a terrestrial DTV transition from an analog terrestrial television broadcasting by government policy is to give incentives for wireless communication industry to make more room to play around for their future growth. In fact, one piece of evidence is that analog signals would be returned to the government for auctioning when DTV transition ended as government as originally planned.⁹

According to the Telecommunications Act of 1996, the U.S. Congress awarded television broadcasters an additional 6 MHz spectrum and analog spectrum for the completion of DTV transition expectedly in 2006. In the Balanced Budget Act of 1997, Congress approved two conditions for terrestrial television broadcasters to continue using their analog spectrum beyond 2006, which eventually raised the point of spectrum return after DTV transition for each terrestrial television station in Balanced Budget Act, 1997 at 105th Congress as follows:

1. If one or more of the largest television stations in a market does not begin DTV transmission by the 2006 deadline through no fault of their own; or
2. If fewer than 85% of the television households in a market are able to receive digital television signals (either off the air or through a cable type service that includes DTV stations)¹⁰

Terrestrial television broadcasters were required to invest in building new digital transmission antennae on their site, purchasing new transmitters, and duration time for DTV transition. This was differentiated by

the size of the market and whether it be a commercial or a public station, such as (1) affiliates of the four major networks in the top 10 markets, including NBC, CBS, ABC, Fox required to convert to DTV by May 1, 1999, (2) affiliates in the market between the top 11 and 30 position by November 1, 1999, (3) rest of all commercial television stations in the smaller markets by May 1, 2002, and (4) noncommercial television stations including Public Television by May 1, 2003.

As leading stations, the four largest commercial television network stations showed their effort in accelerating speed toward DTV transition. Eventually they showed their goodwill and yet 24 affiliates in the top 10 markets launched their DTV signals on the air a year earlier by November 1, 1998.¹¹

The completion date for the DTV transition from analog has been shaky because of the original rules and regulations by FCC that the day of realizing 85 percent diffusion of DTV at home would be the time to shut off analog signal. Due to the difficult situations and numerous issues, for example; how to cover low income households to guarantee them receive digital television signal rather than current analog signal at home, it was not realistic that the U.S. DTV transition would complete the transition as planned by the end of 2006. Finally, the date for DTV transition completion was set under President George W. Bush administration on February 17, 2009 after the Super Bowl Game ended.¹² However, under President Barak Hussein Obama's administration the hard date was extended to June 12, 2009 and completed on time.

Japanese Broadcasting Regulation and DTV Transition

In February 1953, Japan Broadcasting Corporation (NHK) began its television broadcasts followed by commercial television broadcasting by Nippon Television Network Corporation (NTV) in August 1953. Basic regulatory frame work of Japan was set by the promulgation of the Three Sets of Laws, such as (1) the Radio Law, (2) the Broadcast Law, and (3) the Radio Regulatory Commission Establishment Law.

One of the characteristics of the Japanese broadcasting framework in regulation was a result of the Allied Occupation of Japan encouraged them to adopt an American type of administrative system, in this case establishing the Radio Regulatory Commission in 1950. The Commission was dissolved in July 1952 after the San Francisco Peace Treaty (Treaty of Peace with Japan) was signed. Eventually all the functions were in the hands of the Ministry of Posts and Telecommunications with a newly established Radio Regulatory Consultative Council that was responsible for regulating radio, television, and cable broadcasting.¹³

The most basic thing to be understood at the beginning is that Japan adopted the National Television Standard Committee (NTSC) standard in television broadcasting system in the process of democratization period after World War II. This lead to Japan's bouncing back to the world production power force. Additionally, the state-centered or elitist broadcasting policy-related regulatory framework enabled Japan to standardize not only technological terrestrial television standards, but also influenced the population's social values aimed at solidifying Japanese society.

After reinventing Japan's broadcasting industry comprised from both public and commercial broadcasting, or a dual structure system in conventional television broadcasting, Japan then tried to lead the world in advanced television development with a highly advanced next generation television broadcasting system. It was based on the satellite broadcasting system developed by the Science and Technology Research Laboratories of Japan Broadcasting Corporation (NHK) and some consumer electronics companies including Sony Corporation of Japan.

There was a pattern of making an alliance in inventing the advanced new technological innovation for the future. At that time, Japanese policy-making pattern could be evaluated as a unified and effective

approach initiated by Japan's unique policy-making which included elite politicians, bureaucrats and numerous businesses, a unique and respected system until the late 1980s and early 1990s.

The Ministry of Posts and Telecommunications changed its structure under the government's leadership in 2001 and merged into the Ministry of Internal Affairs and Communications (MIC). In regards to the Japanese version of DTV, called Chi-dejika (terrestrial digital television broadcasting = TDTB), it was studied and discussed by the Advisory Group for the Terrestrial Digital Broadcasting under the auspices of the MPT from 1997 to 1998.

After some careful discussion between the government and the broadcast industry, the Japanese TDTB started from the major broadcast markets. Included one year earlier as originally indicated by the MIC starting in December 2003 with (1) the Greater Kanto Area including Tokyo, Chiba, Kanagawa, Saitama, Gunma, Ibaraki, and Tochigi prefectures, (2) the Greater Kinki Area covering Osaka, Kyoto, Nara, Hyogo, Wakayama, and Shiga prefectures, and planned start in (3) the Greater Chukyo Area embracing Aichi, Mie, and Gifu prefectures; and the final commencement of TDTB of Japan including all television stations were from December 2006 as the MIC originally announced. Signing off the digital television signal meant at least from the master transmitting station that the incumbent station coverage area would initially not be fully covered.

II. Regulatory Trend in Comparison between Japan and the U.S.

Regulatory trends both in Japan and the U.S. seems to have some differences and similarities due to the fact that each country's broadcasting system is unique and has been characterized in its own original media development history from the aspect of the nation's demographics, laws, economies, culture and society.

In the U.S., it is worth pointing out that the Congress, the Courts, the White House, Citizens Groups, and the Regulated Industries (Radio/Television stations, the networks, among others) have tried to obtain bargaining power among themselves and they have mainly accomplished their goals with some results by the FCC.¹⁴

There are a variety of approaches when looking at policy-making, such as the state-centric, the elitist approach, society-centric, the pluralist approach. Among those, for example, for a pluralist analysis, Krasnow and Longley's broadcast policy process from a pluralist point of view is very effective.¹⁵ Krasnow and Longley basically utilized the input and output model indicating that input (demands and supports) are shaped out of and made into decisions or output through the interaction of five major participants, such as the Congress, the Courts, the White House, Citizens Groups, and the Regulated Industries related to the independent government authoritative agency, the FCC.

Another point of view for the broadcast policy-making is that the model needs to be used to understand outcomes, which is similar to outputs, meaning that the model should be used to understand the regulatory policy through the details of the selected case studies. By doing so, it could be possible to understand some important interactions among those major determiners of regulatory policy along with the outcomes.¹⁶

In Japan, all broadcast policy-making relating to the critical decision-making has traditionally been in the hand of government authorities. There are many ways of looking at Japanese broadcasting policy, so many cases focus on either a state-centric, a society-centric, or an intermediate position between state-centric and society-centric approaches, while it could be argued that the major approach is state-centric as the most commonly used explanation for broadcast policy-making of Japan from a dominant perspective.¹⁷

There is an expression, 'Japan Inc', as symbolic of Japanese business success during the bubbled economy back in the 1980s, and this symbolizes the close relationship between government and industry. On the other hand, from the structure-functional approach Richardson and Flanagan pointed out that Japan's policy-making system has its own unique characteristics and is in many ways a special case and emphasized the importance of output, outcomes, and capabilities as central roles.¹⁸

Comparative Perspectives of Digital Television in Transition by country-by-country

When looking at terrestrial television broadcasting toward digitization there exist some comparative studies done from a country-by-country approach.

Herman Galperin compared the regulatory incentives by comparing the government policies on digital television among the U.S., France, and the U.K. and indicated that the U.S. had an aggravated coordination issue to solve the situation of struggling DTV transition of the U.S. In this context Galperin even pointed that the Congress and the FCC could take more pro-active policy roles.¹⁹

Dupagne and Seel focused especially on High-Definition Television from a global perspective leading to the main cause of DTV transition and made distinctions among three main models known globally as the U.S. HDTV policymaking mode, A European HDTV Policymaking Model, and the Japanese HDTV Policymaking Model.²⁰ Moreover, regarding digital terrestrial television in Europe, Brown and Picard comprehensively edited the work on explaining the comprehensive overview of European digital terrestrial television in transition and also exploring to understand the county-by-country cases in Europe by each country's expertise to obtain more detailed policy-making.²¹

There are numerous comparative perspective studies including by relying on some theoretical lenses, but one of the crucially important key political players, broadcasters' voice, sometimes the elite bureaucrat, in this case the key bureaucrat, who made a considerable influence on accelerating the speed of DTV transition of the U.S., rarely could be found. Therefore, listening to the television broadcasters' real voice could assist the macroscopic understanding of broadcast policy-making and explicitly explain extended or further policy-making outcomes as aftermath of the DTV related policy-making.

In comparing the international cases and adopting each theory in application of different countries cases, it gives somewhat diverse ways of viewing and analyzing the processes. For researchers in the international context, theories and models developed in western countries cannot always be precisely applied to the Japanese context.²²

Taking these considerations into account, this study tries to find some commonalities and similarities in making a transition from analog to digital terrestrial television broadcasting in Japan and the U.S.

To understand the digital terrestrial television broadcasting in transition, it is necessary to understand the historical development of television broadcasting and its related policy and policy-making due to the notion that innovation would not be realized in the vacuum of technological development. After comprehending the fundamental television broadcasting system in analog standard, it is inevitable to consider what was desired with what effects it will have on developing the next generation television system or in this context, the digital terrestrial television broadcasting system.

Furthermore, additional concrete questions were raised and asked to both U.S. and Japan terrestrial television broadcasting related personnel as follows:

- (1) What was needed and expected in terms of development and innovation in the next stage of television broadcasting in executing the policy for the terrestrial digital television;

- (2) How the newly developed and innovated system was diffused domestically and internationally; and
- (3) How the related broadcasting policy and its policy-making processes gave the impact on television broadcasters financially and daily broadcasting operations

To answer these research questions this study utilized in-depth interviews of individual broadcasters both in Japan and the U.S.

III. Research Method

This study focused on one of the key political players, television broadcasters during the DTV transition of the U.S. and Chideji-ka (地デジ化) of Japan (Digital Television Transition in English) referring to TDTB.

There are very few in-depth case studies directly conducting professional interviews in executing terrestrial broadcasting policy-making in Japan and the U.S., which has shared some common strategies in developing the next generation of terrestrial television system and television reception receivers, such as digital television sets. This research mainly deals with terrestrial television broadcasters and how they managed the digital television transition from the aspect of replacing equipment and reinventing stations' operations and management.

Interviews were conducted with the broadcasters of the U.S. and Japan, policy-makers of the FCC and scholarly expertise in U.S. broadcasting studies. In regard to Japan's interviewing all the terrestrial broadcasters, 127 commercial terrestrial television stations were interviewed except the only one public broadcasting entity, NHK which covers Tokyo with central planning unanimously applied digital transition planning to all stations in Japan due to their role of embracing both local and network functions at the same time.

IV. Reporting Results

There are some common issues even though the U.S and Japan could not share exactly the same regulatory frameworks in making DTV (U.S.) and TDTB (Japan) transition from conventional analog systems. All interviews were conducted in both countries at about the same time when the U.S. and Japan had been in the process of digital transition. During this central transition period interviews were conducted in the U.S. between 2004 and 2005 and in Japan between 2007 and 2009.

Some common issues were discovered in both countries particularly through professional qualitative interviews.

1. Transition Status: Each station's unique situation in making digital transition, related to the question about what was needed and expected to develop and innovate the next stage of television broadcasting in executing the policy for the terrestrial digital television;
2. Managing Transition: The status of diffusing digital television broadcasting, related to the question on how the newly developed and innovated system had been diffused domestically and internationally; and
3. Issues and Concerns to Overcome: Any unintended consequences happened and to be solved, such as frequency allocations and finding financial resources and finally reaching they point of confidence for when

the digital transition will complete

1. Transition Status

1) U.S. Transition Status

Each U.S. broadcaster has received the transitional detailed plan announcement by the FCC seriously and worked diligently to make it on time to launch DTV broadcasting, but the situation depended on (1) the size of the market where a station is based, (2) unique U.S. operating and operated (O&O) stations by the network station centered affiliation structure where the headquarters are located in the city of New York, and (3) independent media group owned stations who owns a group of television stations in several states, called as the multiple ownership of television stations.

One of the network stations named NBC Universal (Vice President Peter Smith; interviewed on November 7th, 2004) whom the researcher interviewed in 1999, remembered a previous interview and stated NBC's transition status as follows:

Vice President Smith: At that time (in 1999 the time DTV signals signed off as a leading network station of DTV transition), the prediction was that by 2006 the whole change would have happened, and we would be able to turn up the NTSC (analog broadcasting). Well, the technical people within General Electric, which is the parent company of NBC, actually said, "Well, looking at typical trends for new technology, and basically the costs of the technology, they said that basically it's going to take 10 years for even the start (the digital only broadcasting operation) ... It was interesting that high cost, high resolution TVs were being sold, but not generally to people who used them for high definition television over the year. And there's probably two reasons. One was the difficulty of reception because, unlike Japan, we did have a problem with reception because of 8VSB (eight-level vestigial sideband), the U.S. transmission standard of DTV decided after the comparison with Frequency modulated standard, COFDM (coded orthogonal frequency-division multiplexing). ... From the point of view of high definition and visually exciting programming, I think we're in good shape.

* underlined parts added by the author.

Vice President Smith pointed out that in addition, he still could not find abundant consumer purchasing power of DTV sets, numbering about one million in 2004, but as a leading network stations aggregation efforts to produce high definition based programs to not only for television programs, but also for cable program providers. After 5 years from starting DTV transition, VP Smith evaluated that all hurdles were finally cleared by NBC's own effort and expected everything to go smoothly.

A network station executive, Vice President Joseph Flaherty (Engineering) of CBS Corporation (interviewed on November 7th, 2004) mentioned a similar situation:

Vice President Flaherty: So, we started high definition broadcasting five years ago (1999). And, as you know all of our prime entertainment programs, except news, and now some of these reality programs are still standard definition. But all of our main dramas and situation comedies and that are all high definition every day of the week. Plus, sports on the weekends – major sports – Masters Golf, the US Open tennis and so on. ... So now, the stations, of course, around the country, their biggest expense is their initial expense. They have to buy a transmitter, antennas, reinforced towers, and transmission lines. Now, that is probably more money than several years of normal capital expense for a station... And this means that they don't begin by

buying cameras and recorders and so on. They broadcast what the network sends them.

Vice President Flaherty indicated the whole situation of the U.S.DTV transition and pointed that the next issue for more DTV penetration to the TV households purchasing will be a DTV set penetration.

2) Japanese Transition Status

In three major broadcasting markets in Japan, all started transmitting stations signal in the air in December of 2003. Interviews were conducted individually among all 127 commercial stations. Generally due to the MIC's directing based on the study group for TDTB transition under the MIC. At that time, the group being asked to make a plan for the MIC, replied that the appropriate timing to launch TDTB transition would be by the end of December 2003.

One of the Japan's network stations in Tokyo (interviewed on September 11, 2007) remembered the situation the launching date was decided;

The executive manager of Commercial Network (A) station, responsible for greater Tokyo area local coverage: We have worried about when we would sign the digital signal on the air because on August 7th, 2002, the whole framework was decided for TDTB transition by the Radio Regulatory Council directly advising to the MIC. MIC took the advice from the Radio Regulatory Council and decided the launching digital signal date would be by the end of December 2003 in major three market areas. Japan already completed the process of fully digitized satellite broadcasting transition back in 2000, and yet Japan uniquely adopted the mobile broadcasting channel synchronized with the TDTB inauguration.

However, we are not sure whether we could recoup investment on this mobile broadcasting system. That is all we have considered to start. TDTB signal coverage in 2007 is up to 96 percent. General understanding is that (after 4 years) they say it would finish the 100 percent coverage soon, but believe or not, (Japan's unique mountainous situation) we have to accomplish accumulative coverage, for example, 0.1 percent each. At this moment, we could cover our responsible contour broadcasting area with 96 percent coverage by 10 transmitting stations, but for left of 4 percent coverage we have to set up another 100 over tiny transmitting stations. This is not cost effective.

Japan's TDTB transition seemed to be very smooth and maintained a good pace, but due to the geographical features, TDTB transition, in reality, was not an easy task to complete. Rather, the U.S. had the advantage of transmitting DTV signals to cover contour areas effectively with one transmitting station, so that there is a big gap between two even two countries trying to complete the digital transition with the same amount of duration period. And at the same time both countries seemed to have the same hurdle to overcome, such as promoting digital broadcasting to all over the country.

2. Managing Transition

1) U.S. Managing Status

To make U.S. DTV transition go forward, not only major market based television stations, but also local based middle and small sized market based stations desirably could keep a good pace for transition.

There are several issues raised by the interview sessions. One is managing finance to invest to launch digital transmission in the area. An example is that New York based network station led O&O stations,

generally located in over middle-sized markets in the U.S., spend approximately \$3 million per one O&O station. One media owner group stationed in Cleveland did indicate that they would spend between \$3 million and \$5 million. These two cases are typical middle-sized stations and all stations interviewed stated that their spending budget for launching DTV broadcasting would be manageable according to the DTV transition rules.

In terms of efficiency of covering the contour area by the one main transmitting site, the U.S. had a cost-effective advantage, and there was a general tendency that a DTV station started with building main transmission site and put the analog channel program with up-converted treatment on the DTV channel, and not so much investment for in-house equipment, such as news camera, digital control board, and its related production equipment and facilities.

It seemed that the smallest amount of digital transition finances allocation case happened at an independent station, WMFD TV in Mansfield, Ohio where the headquarters are located in the suburb of and belonging the market of major city of Ohio, Cleveland. WMFD station invested \$260,000 for starting digital broadcasting to cover 280,000 households.

Each U.S. broadcaster has received the transitional detailed plan announced by the FCC and worked so hard to make it on time to launch DTV broadcasting, but it seems that particularly in local areas the FCC's rules and order has been seriously received, so that they felt a strong need to make the promise come true. At the same time, there is a tendency that the wealthier a broadcaster is, the smoother the transition.

2) Japanese Managing Status

Japan's managing status was influenced by (1) the time of starting TDTB, (2) differences of geographical conditions in order for a station to cover whole contour area fully, and (3) whether making an alliance among affiliate stations of the national network.

The timing of starting TDTB influenced on the equipment and facility price due to the fact that the price of the digitally based equipment has decreased dramatically. This means that a head starter might have to put more budget when starting TDTB transition. Geographical location matters. A station that has to cover digital airwaves over several islands in the current contour area tend to need to spend about the equivalent of \$15 million in Japanese yen or more to do so.

Lastly, by trying to make an alliance among network affiliate stations, they could purchase digital transmission antennae and related facilities with reduced prices, so that by this way particularly a small sized station could save budget allocation.

For Japanese TDTB stations, the finance department in consultation with the top management executives including the Presidents and Vice Presidents of their companies would spend between \$25 million equivalent amount of Japanese yen for the small sized independent station located in the Greater Kinki region of the western part of Japan, \$40 million in the small sized network local affiliated station in Yamaguchi prefecture, \$55 million for the middle sized station in Miyagi prefecture in the northern part of Japan, \$100 million for the mountainous Hokkaido affiliate, and the largest investment of \$160 million for the Tokyo based leading networks to cover the greater Kanto regional area.

As for the Tokyo network station which would spend the largest amount of transitional budget, the station played its role as the key station to send national program signals to the entire country as well as covering the greater Kanto region (its center core is Tokyo prefecture) as a local station. It is natural for the Tokyo network station to increase the budget for the TDTB transition as well as playing a part in

coordinating the entire affiliated stations to proceed accordingly in order for all the affiliates to complete the transition on time.

Another part of the effort is to make government-business partnerships based national campaign successful by organizing equally committed cooperative atmosphere among all stations including the influential public broadcaster, NHK. In this sense, the so-called all Japan approach happened when the TDTB transition was completed by the set date on July 24, 2011. One piece of irony is that the whole transition was completed on time, but due to the Greater Tohoku Earthquake which occurred on March 11, 2011, television stations located in three northern Prefectures such as Fukushima, Iwate, Miyagi, were allowed to set the dead line date extension to the end of March 2012.

All in all, it was natural for stations to act considering the amount of investment for digitization would in almost all cases equal to the stations annual budget income. If was not for public policy, no television station will move forward to the TDTB transition.

Japan's TDTB management in transition has gone through the atmosphere of cohesiveness and put this into action and eventually makes a smooth transition. It might be said that political actors, particularly broadcasters, in this case, rather resisting the rules and order by the government made an effort when unanimously recognizing the mandate and inevitable national plan.

3. Issues and Concerns to Overcome

U.S. and Japan in comparison

First of all, the main hurdle for the U.S. DTV transition is when the analog signal termination would be. Due to the soft date in 2005, which means 85 percent households reception rule was not removed, and interviews were conducted the completion of the digital transition did not seem possible. That was crucial for the FCC and Congress due to the fact that the Balanced Budget Act of 1997 really hoped to realize spectrum reorganization in the activity of 'spectrum auction', which was called spectrum management to allocate new frequencies for the mobile business as a new entrant in the level playing field. President Bush eventually signed that the last day of analog television broadcasting into law on February 17, 2009.

On the other hand, Japan originally organized the digital transition date for July 24, 2011 and Japanese broadcasters started looking at the end of analog day, made an investment plan, and then nationally promoted TDTB transition. As for Japan, all broadcast stations pointed to TDTB ambassador in each greater area or prefecture, and government and industry players including consumer electronics as well as broadcasting altogether had worked hard to announce the last day of digital transition and encouraged television households to purchase HDTV sets at home. It seemed that the U.S. learned from Japan's approach and in fact the U.S. did for setting the completion date for DTV transition.

Conclusion

This study utilized in-depth interviews of individual broadcasters both in Japan and the U.S. as well as other political players. In the text, descriptive quotes are limited, so that more core interview script lines could not be put in this presentation.

But, for example, the FCC high official, then Mass Communication Bureau Chief Kenneth Ferree also became a co-researcher. During that moment under FCC Chairman Michael Powell did try to make change happen according to the Telecommunications Act of 1996.

In this time period, not only accelerating DTV transition in the U.S. and also deregulating media

ownership rules received the big attention to the general public as well as media industry players.

The research tries to find that under the changing media landscape in the age of the Internet how the most up-to-date case of broadcasting public policy and its execution concerning the terrestrial digital television broadcasting operations would be understood by the terrestrial television broadcasters both in Japan and the U.S.

Interestingly, by comparing broadcast policy and its policy-making processes between Japan and the U.S., it was discovered that the free marketplace trend referring to laissez-faire approach was limited in the U.S. and a similar approach such as the Japanese industrialized policy-making, which is called state-centric approach would finally be adopted.

Digital terrestrial television policy and its policy-making might be an exceptional case but it would be the last public policy-making before the dawn of a new broadcasting regulation period in the age of Internet. Comparatively tight regulations in Japan and an exceptional case in the U.S. that all broadcasters accustomed to the free marketplace philosophy would to some extent face tight government control.

This is a comparison integrated in a case study on digital broadcasting in transition by challenging more in-depth status and situations happened inside the arena after executing public policy.

One of the challenges of the case study would lie in the fact that social scientists prefer to study the most representative events and issues. And yet this is difficult because policy-making is an interactive process without a clear beginning or end.²³

Further studies are desired to link the policy-making process and the phenomena happened after the policy executed, so that more reciprocal input and output analyzing circles in public policy studies may be encouraged.

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移行期の放送政策・規制と新パラダイムの幕開け

—デジタルテレビ放送移行の日米比較—

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本論文は、地上テレビ放送がアナログからデジタル方式へと移行した期間に焦点をあてており、日本と米国の取り組み事例を比較している。日本は第二次世界大戦後、米国放送システムから多くを学び、さらに放送政策の立案およびその過程にかかわる点でも大きな影響を受けている。一方、日米の地上放送にかかわる政策の履行にかかわって、直接、その政策立案の一線に身を置いた放送事業者および関係者へのインデプス・インタビューをとまなう研究事例はほとんどみられないという状況がある。

日米両国の地上デジタルテレビ放送の移行について理解するには、まずテレビ放送の歴史的発展とこれにかかわる政策および政策立案を把握することが必要であり、そこでは放送システムの進化発展は技術の進歩なしに実現されることは不可能だったとの考えが存在する。論文では、先ずアナログ標準での基本的なテレビ放送システムを包括的にとらえた。その上で、地上デジタル放送実現と期を同じくして次世代のテレビを開発した際、その過程においてどのような関連効果が期待されたかを考察することが不可欠となった。

その上に立って導出された具体的な研究課題は以下のとおりである。まず、(1) 次世代の革新的なテレビ放送システムを開発する際、地上デジタルテレビ放送にかかわる政策履行とかかわって何が必要とされ、期待されたのか、(2) 新たに開発された革新的なデジタル放送システムは日米国内外でそれぞれどのように普及していったのか、最後に (3) 地上デジタルテレビ放送にかかわる放送政策および放送政策立案の諸過程が放送事業者に対し、どのような経済的側面に、さらには日常の放送業務に影響を与えたのか、以上の三点が研究課題として設定された。

調査結果として、将来に向け進化・発展する技術革新を実現する際、定石として関連事業者が連携・連帯して取り組む傾向がみられた。日本独自のものとして生み出された政策立案パターンは、秩序・統一がとれた効率的なアプローチを実現するものとの評価されるが、その際、国会議員、高級官僚、そして数えれば足りない程多数の放送関連事業者が関係していた。これは1980年代後半から1990年代前半において、日本方式として広く認知された政策立案の仕組みである。先に示した研究課題に答えるため、本研究では日米の放送事業者に対して個別にインデプス・インタビューを行なった。

調査ではインターネット時代で変貌をとげるメディア環境下で、地上デジタルテレビ放送という最新の放送関連公共政策とその履行が、日米の放送政策および政策立案の諸過程でどのように理解されるかを明らかにしようとした。その際、レッセフェールに象徴される市場原理主義を多くの場合採用する米国のアプローチは限定的な機能しか果たせず、むしろ日本の産業政策的な側面が政策履行の最終段階でみられた。地上デジタル放送政策とその政策立案は、その理解において一般化される事例ではないかもしれない。しかし、インターネット時代にあって新たな放送規制時代の到来を前にした最後の関連公共政策だったと理解出来るだろう。その意味では、日米の地上テレビ放送デジタル化は、比較的窮屈な放送規制環境にあった日本、例外的

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とは言えすべての放送事業者が自由市場の考えになじんできた米国という、一見異なる放送政策環境を抱える両国において、ある程度同様に政府から向けられた政策的なかかわりに直面した事例だったと言える。

キーワード：比較放送システム、デジタルテレビ (DTV)、地上デジタルテレビ (地デジ化)、移行、アメリカ合衆国、日本、政策立案、メディア経営