

The Development of Digital Television in China and Norway

Robert Vaagan
Oslo University College

Yu Wang
Communication University of China

The paper¹ identifies key determinants for government media policy formulation in China and Norway regarding the shift to digital television (DTV) taking place in many countries. Drawing mainly on documentary analysis of key policy documents, the paper finds that despite obvious differences between the two countries, Chinese and Norwegian authorities face broadly similar challenges with respect to DTV: a need to weigh public interest, state broadcasting services and, ultimately, political control against commercial market pressure, viewership preferences, and affordability.

Compared to other media, television has, since the 1950s-60s, come to play a dominant role in many countries as a means of mass communication and entertainment; global television has become an important aspect of globalization (Cottle, 2003; Langer, 2003; Bignell, 2004). DTV is widely seen as a major paradigm shift in television history. The U.S. Federal Communications Commission states that DTV will “transform your television viewing experience” (FCC, 2007). Many developments – technological, commercial, political and cultural – are converging as the analog switch-off and digital roll-out take place globally (Carlsson, 2006; Harrie, 2006; Iosifides, 2006; Leiva, Starks & Tambini, 2006; Wang, 2005; Zhou, 2007). The “second media age” involves media convergence and the blending of traditional broadcasting with interactive networking (Bolin, 2005; Holmes, 2005). Although digitization is technology-driven and global, including programs and formats, it is important to realize that television content remains largely local (Bignell, 2004). At the same time, emerging interactive networking technologies (e.g. EPG and e-commerce through TV) seem to confirm the validity of “narrowcasting” (i.e. individual preferences of the viewer-consumer become decisive criteria for business development) (Hirst & Harrison, 2007). The “public sphere model” is vying with the “business model” as public broadcasters limited to license fees, struggle to compete with the marketing and advertisement-driven commercial broadcasting of big business media conglomerates (Carlsson, 2006; Croteau & Hoynes, 2006). All these developments converge in DTV.

Theory, Methodology and Research Focus

While China and Norway are both rich countries by many standards, their differences are obvious not least in terms of demographics, geography, politics and culture. Yet these factors also make them interesting to compare, regarding media digitization. For instance, their governments have chosen different DTV platforms. In China, where DTTV has never been a real option, policy makers have opted for cable TV as the main platform for DTV development. Analog switch-off and digital roll-out is planned region-by-region over a 10-year-period: 2005-2015. Despite enormous economic growth over the last decade, there is uncertainty about the willingness of Chinese viewers long accustomed to free television

services from the national broadcaster CCTV, to adapt to a new environment of pay-TV which DTV ushers in. At the same time, the main policy goal of the ruling Communist Party is the development of a “harmonious society” (Hu, 2005). Policy makers are therefore attempting to find a business model that will prove attractive to developers and viewers alike and at the same time allow Chinese authorities retention of political control. In Norway, switchover will take place region-by-region from 2007-2010. European public broadcasters are promoting DTTV (Aslama & Syvertsen, 2006), but Norwegians are questioning whether their government’s longstanding advocacy of DTTV is viable in the face of commercial DTV competition based on satellite, cable or IPTV transmissions.

Several theories and methodologies are relevant in a comparative article like ours. The choice of theory and methodology depends on the focus of analysis, typically either audiences, institutions or texts (Bruhn, 2002; Holmes, 2005; Williams, 2003). Here we are mostly concerned with the formulation of government DTV policies in two quite different countries. Syvertsen (2004) in her study of Norwegian media policy distinguishes between analysis of policy content and consequences (normative theory, policy goals, and policy consequences) and descriptive studies of policy formulation (stakeholders and structure). In this brief paper which is a first draft of a larger research project, we have chosen to limit the discussion to a description of policy formulation focussed on stakeholders and structures. This research focus will be developed in later works with comparative analysis of key institutions and audiences, drawing on appropriate theories and methodologies.

China

Development of DTV Policy

Digitization is making considerable impact on the broadcasting industry, on individual families and on society as a whole. All governments attach great importance to digitization and formulate policies and plans, reflecting active encouragement of digitization. Many countries have made a timetable for digital switchover and analog switch-off.

Depending on the differentiation of the transmission signals of the television, digital television consists of three types – terrestrial DTV, cable DTV and satellite DTV. The development of these three types of digital TV is also a factor any government will take into consideration in establishing a policy for the digital TV industry. As it is conceived by the European Commission (EU, 2005), the term switch-off refers to the termination of terrestrial transmission of analog television; switchover refers to the transition from analog to digital broadcasting of all networks, including terrestrial, cable, satellite and DSL (digital subscribe lines).

In China, the State Council has prioritized broadcasting digitization since 2004. The State Administration of Radio, Film and Television (SARFT), which is the authority over the radio, TV and film industries in China and a main stakeholder, has established a policy for digital TV regulation in the form of a series of rules and regulations in recent years. (SARFT, 2000-2005). Thus in 2004, SARFT estimated in the *10th five-year plan of radio, film and TV technology and plan of 2010 prospect* that digital television users will exceed 30 million households in 2005, that digital broadcasting will be fully applied in 2010, and that analog switch-off will be achieved by 2015 (SARFT, 2004b). In terms of China, digital television

policy refers to the digital television policy in mainland China, excluding Taiwan, the Hong Kong Special Administration Region and the Macao Special Administration Region. The Cable TV Corporation of Hong Kong SAR closed the simulating signal on June 10th in 2004 and all network users shifted to digital TV. Digital ground broadcasting opened in 2004 in Taiwan. According to the Taiwan Economic Plan and Development Committee, the current frequency channel of simulating ground TV will be cancelled by 2010 and digital TV broadcasting will be applied fully.

DTV Policy of SARFT

Chinese digital television policy took shape from the mid-1990s. SARFT began to do some research of digital television policy from 1996. In the *Transition plan of the digitization of satellite broadcasting* (SARFT, 2000), SARFT made it clear that the promotion of digital television begins with cable DTV. In November 2001, SARFT approved that cable DTV will be a pilot commercial operation in the first 13 cities nationwide. That number had grown to 49 at the end of 2006.

On January 17, 2003, SARFT issued a *Work outline of the radio, film, TV in 2003*, in which it was stated clearly that the focus is “to establish the new system of the cable DTV, to construct four platforms, to promote the transformation of the broadband, optical-cable and bi-direction in the cable DTV, to clarify the key technology on the user regulation system, electrical program guide information and the set-top-box” (SARFT, 2003a).

In May 2003, SARFT promulgated a *Transition Time Schedule of the Cable TV Digitalization in China* (SARFT, 2003b). This document defined the strategy of China’s digital switchover beginning with Cable TV. A plan was advanced to fulfill the transition period of cable TV digitalization region-by-region. The digitization in the East, Central and West regions will be conducted in four stages in the years 2005, 2008, 2010 and 2015 gradually, then realizing the digitization of the cable TV in full scale.

In the first stage from 2003 to 2005, cable digitization will be fulfilled in the municipalities directly under the central government, the cities at higher levels of the municipality of the East region and the capitals of the provinces in the Central region. In the second stage from 2006 to 2008, cable digitization will be fulfilled in the cities at higher levels of the districts, the districts in the Central region, the majority counties, part of the cities at higher levels of districts, and the minority counties in the West region. In the third stage from 2009 to 2010, cable digitization will be realized in the counties in the Central region and the cities at higher levels of counties in the West region. In the fourth stage from 2011 to 2015, cable digitization will be carried out in the counties of the West region and simulating radio and TV will be cancelled.

From June to November 2003, the SARFT approved a total of 46 cable digital TV pilot areas, covering 26 provinces (automatic regions/municipalities) and 4 municipalities directly under the central government. A month later, the SARFT issued *Implementation advice on establishing the new system of the cable digital TV technology* (SARFT, 2003c). This formally raised China’s digital television industry chain constructed by “four platforms” and emphasized the strategy of the overall parallel movement of set-top and the core of the new system of new cable digital television technology – the orientation, technology standard and the construction requirement of all links of the four platforms.

2004 was the ground-breaking year for China's digital switchover. That year was nominated as the "Digital Development Year" by the broadcasting system. SARFT formally made it clear that the target strategy of the digital transition is to fully transfer to digital cable television. After the release of the *Work Outline of the Radio, Film and TV Development Year* (SARFT, 2004a), SARFT tried to get support from national governments and relative authorities. It introduced a series of circulars promoting and standardizing digital pay-TV channels. This applied to the running scale, the industry operation, the business criteria and the introduction of the competition. These elements combined to bring the gradual industry policy transition to maturity.

In 2004, SARFT also issued the *Circular on Speeding up the Surveillance Platform Construction of the Cable Digital TV*. Here it pointed out "the establishment of the national cable digital surveillance platform could guarantee the sound development of coordinating and monitoring the program platform, transmitting platform, the operating order of the service platform, the service quality, and the cable DTV" (SARFT, 2004c). SARFT furthermore promulgated a *Guideline of the Cable DTV Service Platform Construction* (SARFT, 2004d), 10 major forms of basic business of cable DTV. The ten forms of basic business of cable DTV in China are: (a) the basic business of standard definition TV; (b) the paying business of standard definition TV; (c) the business of multi-direction radio; (d) the guide for the electronic program; (e) the radio information service; (f) the business of pay-view on-demand to be; (g) the business of pay-view on-demand; (h) the commercial service; (i) the games business; (j) the business of high-definition TV. These forms cover the current program service, information service and commercial service of cable DTV. By the end of 2004, SARFT had approved 134 pay-TV channels and 31 pay-radio frequencies (Wang, 2005).

So far, there are five comprehensive operation platforms of digital TV approved by SARFT: (a) CCTV; (b) SMG, the Program Production Center of the Satellite TV Channel; (c) the Corporation of the Central Radio, Film, TV Transmitting Network; (d) the financial group formed by Beijing Broadcasting Group, Tianjin TV Station, National Radio Station, Shandong Radio and TV Station; and (e) Anhui TV Station.

In 2005, SARFT further defined the strategic mission of "three steps" and the development target: promoting cable TV digitization in full scale from 2003, implementing the broadcasting experiment of terrestrial DTV and the business of the satellite television live broadcasting in 2006, and promoting all-round terrestrial digital broadcasting and expanding its prevalence in 2008.

Major Determinants for DTV Policy of SARFT

Why did China begin its digital switchover from cable DTV and not from terrestrial DTV, as did most countries in the world? China's choice must be seen against the background of China's situation. We know that the development of digital television depends on at least three factors: support of government, mature business models, advanced technology standards and economics. The Chinese government's support is evident in all the circulars mentioned earlier. As regards business models, not only China, but nearly all other countries in the world are struggling to find effective business models for digital television progress. The third element, technology, is therefore very important to policy makers.

Chinese people could not watch cable television until the middle of the 1980s. The cable

television system formed little by little, and now cable subscribers in China amount to around 130 million households. The cable system covers cities, towns and some villages, and had by 2005 become the largest cable network system in the world. The cable network has been the most popular platform for Chinese people to watch TV, be informed and be entertained. The cable system is technologically advanced. It has the possibility to transmit digital signals only through a set-top-box. Though Chinese broadcasters began to transfer from analog to digital television around ten years ago, the Chinese government only decided the terrestrial digital television standard in September 2006, and China just launched its first broadcasting satellite that same year. These are the main technical reasons why SARFT has chosen switchover from cable DTV.

Economic considerations are also important. Although the Chinese cable system is the largest in the world, it only covers 2/3 of the Chinese population. Most cable TV subscribers live in cities, either big or small, and they are more affluent than villagers. Urban subscribers require more TV channels, especially the target channels and qualified programs. Most cable digital pay-TV includes these types of channels. They have more need and can pay more for the service.

Cable companies give the cable subscriber a free set-top-box, but cable DTV users still have to pay more than before. In China, TV viewers do not need to pay a license fee for watching TV, although payment is required every month for cable system maintenance. With the transfer from analog to digital television, maintenance expenses grow and cable viewers will have to pay more. This is not a big deal for urban citizens, but it is a burden for some suburban people. It is therefore a good choice to begin the transition in urban areas.

In 2005, altogether 4.13 million Chinese – mostly urban and high-income viewers – subscribed to digital TV, which was a twofold increase compared to 2004. Among these, 3.97 million were digital cable subscribers.

Key Challenges and Issues Ahead

The digital television industry has grown quickly since 2004. There were more than 1.2 million cable DTV users in 2004, and the number was nearly 4 million in 2005. According to SARFT, the number of cable DTV users is over 12 million at the end of 2006.

SARFT has set pilot areas in 49 cities and made a series policy about cable DTV policy, including technical, programming, operating, etc. At the same time, they tried to work together with other ministries to create tax and fee policies. There are 25 cities, including Qingdao, Dalian, Shenzhen, Hangzhou, Foshan, Taiyuan, Nanjing, Xi'ning, Yinchuan, that have finished the cable DTV switch-off. Other cities began the switchover in 2006. They believe user numbers will be around 20 million at the end of 2007.

SARFT hoped the number of Chinese digital television viewers would exceed 30 million in 2005 when they made the *10th Five-Year Plan of Radio, Film and TV Technology and Plan of 2010 Prospect* (SARFT, 2004b), but unfortunately, the actual number of subscribers was only 4.13 million. Even at the end of 2006, the number was around 10 million, which is considerably less than expected.

How has this happened and what can be done in the future? The digital television switchover not only affects broadcasters and audiences, it also changes the industry. For political reasons, it took China nearly ten years to decide on the terrestrial digital television standard.

The slow development of digital television was in some ways caused by this uncertainty regarding technology standards. Cable companies bought set-top-boxes from production factories and sent them to customers for free. The price for a set-top-box is about 500 RMB, so if there are 400 thousand cable users in a city, the cable company has to pay nearly 200 million RMB just for the set-top-boxes. A cable company therefore needs a minimum of 80-100 thousand subscribers to cover its costs. It takes at least 3 to 4 years for a cable company to get its investment back. If we want to have more cable DTV users, one way would be to first reduce the price of set-top-boxes.

Pay-TV is a new phenomenon in China. Nearly all the income of TV stations comes from advertising. With digital television, traditional business models do not work. A major challenge is turning cable users into paying cable subscribers. Customers care about price and content, and customers only pay for what they see as worth while. Most Chinese TV viewers are accustomed to watching free TV programs. They sometimes complain about too many commercials during programs. Given the choice between paying for the programs without commercials or enduring commercials without paying, most Chinese will opt for the latter alternative. Chinese TV viewers will only want to pay for TV channels and content which is substantially different from what they have previously been watching for free. For TV producers and distributors in China, success will ultimately depend on the provision of quality multi-channel programs and content.

Most cable users who want to watch pay-TV have a university education and high-income jobs, and they are not satisfied with traditional programs and TV channels. Cable companies will therefore probably tailor some channel and programs toward these viewers. But the vast majority of Chinese cannot afford to invest large amounts of money in pay-TV. Just as in some European countries, not all Chinese want to switch from analog to digital television. Therefore, SARFT has requested regional cable companies to let TV audiences choose whether they want to transfer to digital television. Cable companies have to transmit six analog channels, including CCTV-1 and their own province's first channel (Zhou T, 2007).

Summary

Analysis of policy development regarding digital television in China (and some other countries) shows that government support is a crucial factor in television digitization. SARFT is a main stakeholder in China, where complete switchover is not an insurmountable problem, although government regulation and phase-by-phase strategy make it a gradual process. Main problems are balancing the public service and business and protecting consumer choice during the period of switchover and switch-off. Technology and an adequate business model are important factors in promoting digital television successfully. Finding a successful business model suited to China's needs with regard to digital television will contribute to a harmonious society.

Norway

Development of DTV and DTTV Policies

In Norway, the use of digital technology for the transfer and reception of television (DTV) is considered to have started in 1974 with the introduction of text television. The analog television technology developed between 1930 and 1950 did not allow signal compression and demanded considerable transmission capacity. Digitization and the use of computers, however, allow signal compression, new services and regulation of access to content (Norwegian Post and Telecommunication Authority, 2007).

A national policy on DTV and DTTV has emerged since 1999, under shifting minority governments headed first by the Christian People's Party (October 1997- March 2000 and again October 2001-October 2005) and The Labour Party (March 2000 - October 2001). As for the term "national policy" it needs to be understood that "management by objectives" (MBO) was introduced in 1989 as the main planning tool throughout the public sector, despite its known weaknesses (Christensen, Læg Reid, Rones & Røvik 2004). National policy here refers to "official policy goals identified by the government and sanctioned by Parliament." In Norway, several stakeholders can be identified both in the public and private sectors, as we shall see. In the public sector DTV and DTTV are inextricably linked since the authorities from the late 1990s have advocated the development of a digital terrestrial television system (DTTV), as the process of digitization and market-driven DTV has evolved. The main arguments in favor of DTTV were its alleged better provision of coverage and better possibilities for mobile and portable reception, as well as more stable sound and picture quality. Cost efficiency was another key argument in that a digital terrestrial network was seen to be cheaper to maintain in the long run than an analog network. Adding to this, DTTV, it was argued, would free valuable band frequency. Signal compression made it possible to transfer four to five digital channels on the same frequency as one program in analog format.

Politicians were made aware that digital signal format can be transferred in most electronic communication networks, not only terrestrial and satellite broadcasting and cable-TV but also telenetworks and data networks such as ADSL and VDSL broadband or mobile-TV. Still, the key argument in favor of DTTV was that it would be under political control. As such, it was perceived to offer national public broadcasters better survival possibilities than leaving digitization of broadcasting to commercial digital satellite and cable operators (Syvertsen, 2004).

Digital signal format allows various new services, and TV suppliers expect interactive services to be profitable, including electronic program guides (EPG), super text-TV, additional information about programs, electronic games, interactive response services e-commerce, 16:9 broadband transmissions, high resolution TV (HDTV), innumerable radio channels, high quality sound and more sound channels, and Internet access (Norwegian Post and Telecommunication Authority 2007).

Many critical voices for the government's advocacy of DTTV were brushed aside, due to concern about the considerable cost involved in parallel analog and digital distribution which had caused financial problems for DTTV in many other countries. To secure a rapid closure of the analog network, it was decided that the analog net should be closed when the entire Norwegian population could technically receive digital transmissions. There is provision for

the use of alternative technology to achieve complete national coverage. A further requirement concerns real access to reception equipment and technical assistance. Norwegian authorities have stated that the cost for reception equipment must be limited (to 1500 NOK for a decoder), and switchover must represent an added value for viewers (St.melding nr. 44, 2002-2003; Syvertsen, 2004).

The development of national DTV and DTTV policies has been influenced by the European Union (EU) and the Nordic region. DTV plays an important role in the EU “information society” vision, and several EU directives and standards have made an impact. Two examples here are The Law on Electronic Communication passed in 2004, and a common definition of SMP (Significant Market Position). Through DVB (Digital Video Broadcasting) 33 countries have developed specifications for the broadcasting of DTV by satellite, cable and terrestrial networks. On this basis, standards for European DTV have been defined by ETSI (European Telecommunications Standards Institute) and CENERLEC (Comité Européen de Normalisation Electrotechnique). In addition, input has come from neighboring Nordic countries through the creation of Nordig and recommended standards for network configuration for carrying digital television signals to Nordig-compliant IRD.

In Norway, DTV and DTTV policies have been formulated by the Ministry of Transport and Communications (MTC) and the Ministry of Culture and Church Affairs (MCCA), and passed by the Norwegian Parliament (NP). Compared with the relaxed “laissez-faire” policies of successive minority governments from 1997-2005, the current majority coalition government has adopted a very active stance, heralded by the high-profiled Minister of Culture and Church Affairs, Mr. Trond Giske of the Labour Party. On May 15 he presented a White Paper to Parliament on *Broadcasting in a Digital Age*, and has intervened several times on key issues, for example defending the DTTV concept by promising the creation of a free, (i.e. license fee-based) state digital-TV channel – NRK3 – to be launched on September 1, 2007.

The MTC supervises The Post and Telecommunications Authority and is responsible for all technical aspects in the telecommunications sector. This includes the Law on electronic communications passed in 2003 regulating technical standards and band frequencies. Recently, the MTC rejected a demand by MTG to broadcast Viasat 4 for free in the digital terrestrial network, on the same conditions as the commercial public broadcaster TV 2. Currently, the main MTC priority is the auction of the vacant license to build and operate a 3G-network in Norway (MTC, 2007). The MCCA supervises the Norwegian Media Authority regarding media and sports. The Ministry’s Department of Media Policy and Copyright was established in 1991 to be responsible for broadcasting legislation, copyright issues, press subsidies and film policy. In the 1990s, several administrative responsibilities in the media sector were delegated to the Mass Media Authority, while the Norwegian Media Ownership Authority was established pursuant to a special Act. In 2005, the Mass Media Authority merged with the Media Ownership Authority and the Norwegian Board of Film Classification and the new authority was named the Norwegian Media Authority (Medietilsynet). The MCCA has just presented a White Paper to parliament entitled *Broadcasting in a digital future* (St.melding 30, 2006-2007), to be discussed below.

While the ministries have left the detailed supervision of DTV and DTTV policies to the Norwegian Post and Telecommunications Authority and The Norwegian Media Authority, parts of its implementation have been entrusted to three limited companies, demonstrating a

mixture of state and private ownership which reflects Norway's mixed economy. All seven stakeholders play important roles regarding DTV policy. In February 2004, Parliament passed guidelines involving the scheduled switchover region-by-region 2007-2010. In June 2006, the MTC and MCCA granted the company Norges television AS (NTV) a license to develop a DTTV network. NTV, which was set up in 2002 and was the only applicant for a license, consists of NRK, TV2 and Telenor Broadcast Holding AS (a subsidiary of Telenor) which each own 1/3 of NTV. While NTV will be the license holder and network operator, another company RiksTV AS was established for pay-TV services (including channel packages, PPP TV, VOD/NVOD). In July 2006, NTV contracted Norkring, a fully owned subsidiary of Telenor ASA and Norway's largest distribution company for terrestrial broadcasting, to develop and operate the digital terrestrial network for television. NTV will lease capacity from Norkring. The contract involves development and operation of the transmission network for 15 years.

By 2006 almost half of the Norwegian population (47%), had access to cable-TV, compared with 32% to private dish/satellite, 35% to ordinary antenna with multi-channel and 4% to communal/joint antenna. Some had several systems. The analog terrestrial network system comprises the two last groups. As for IPTV (Internet-TV), about 85% of all Norwegians in the same period from 1999-2006 acquired home PCs and 80% had broadband access. Of these, about 20% report using IPTV. The Government announced on 15 May 2007 when presenting the revised budget for 2007, that additional funds will be made possible so that the remaining 80,000 Norwegians without broadband will have it before year-end 2007.

Major Determinants for DTV and DTTV Policies

The Norwegian TV market is estimated at 15 billion NOK. It comprises several segments, especially distribution/subscriptions, license fees, advertisements and end user equipment, and many stakeholders in terms of DTV and DTTV policy. Its structure is complicated, with producers of content, artists, broadcasters, distributors, and end users. Also, there is an umbrella organization for the protection of audio-visual intellectual property rights (Norwaco), embracing 34 organizations representing 34,000 individual owners, and there are affiliated industries in advertising/marketing and TV-equipment. The market is dominated by a few large stakeholders: Norsk Rikskringkasting AS (the state-owned license-financed public service broadcaster), TV2 (privately owned commercial public service broadcaster) and the semi-private Telenor (Norway's largest telecommunication company). These three stakeholders have a financial market share of 75% (Norsk Telecom, 2007).

In 2007, Norway had one public and several private commercial TV companies. These offered a total of 48 TV channels, of which all 12 of the public and several of the private commercial channels target the Norwegian audience with programs either in Norwegian or with Norwegian subtitles. The Norwegian Broadcasting Corporation (NRK) has two national and 10 regional channels, using a combination of terrestrial, cable and satellite distribution systems and reaching almost 100% of the population. Among the commercial broadcasters, TV2 has a license which expires in 2009, that makes it also a public broadcaster. This license expires in 2009 and there is currently much uncertainty whether there will be a second public broadcaster in addition to NRK from 2010. The private commercial companies are financed through a combination of commercials and subscription fees, most are cable- and/or satellite-

distributed. TV2, the most profitable of the private commercial companies, opened up two new TV channels in 2007 (TV2 Nyhetskanalen, TV2 Sport). Analog switch-off and digital roll-out will start in the autumn of 2007 and be done region-by-region. The advent of digital-TV will have repercussions on the established system of TV companies and channels, including penetration rates and distribution systems. Matters are complicated since the Norwegian authorities have consistently pushed for the development of a digital terrestrial television network system – DTTV.

In 2006, the most viewed channels broadcasting in Norwegian were NRK1 (47%), NRK2 (5%), TV2 (51%), TV Norge (18%), TV3 (11%), and local TV stations (1%). Foreign channels (including Swedish and Danish channels which are easily understandable to most Norwegians) not broadcasting in Norwegian were watched by only 16% (Vaage, 2007).

A number of critical voices have claimed that DTTV represents obsolete technology and that pay-TV for everyone is a likely outcome. One prominent critic, Professor Rolf Høyer, Norwegian School of Management, in an interview in *Dagbladet* 3 May 2007, reminded readers he had been among the early dissenters who had cautioned against modernizing the terrestrial system. Instead, he had recommended using a combination of satellite and cable TV and keeping the old terrestrial system until a more technologically convincing and operable distribution form had been found. The statistics in tables 2-3 support his views. More and more of us switch to cable-TV, Internet-distributed TV and not to mention satellite/dish. Some of those who have not yet acquired cable or satellite TV may feel no need to do so. Some may be happy with today's analog network and may see no advantage in digital-TV. The investments made by NTV to develop the digital network are estimated to cost somewhere between 1.4 and 1.5 billion NOK, allowing for 20 channels, based on NTV figures. This is a complete waste from the consumer's point of view, according to Høyer. Digital terrestrial TV may be a desperate attempt by NRK and TV2 to protect their market positions in the fierce competition with new channels now being distributed through satellite and cable suppliers. Cable or satellite suppliers like Canal Digital, Viasat, Get and Canal+ can each offer far more TV channels than NTV. In some years the investments in DTTV may prove to be a scandal if judged against what the consumer actually benefits. Høyer also believes NRK will attempt to earn money from consumers in addition to their license fee. NRK has talked about pay-per-view and if they succeed, they will benefit both from the license fee and pay-per-view. The digital terrestrial system may already be outdated. Young consumers today demand interactivity, and broadcasting is becoming interactive networking in the second media age (Holmes, 2005). In contrast with the Internet and cable-TV, the digital terrestrial system has no possibility for two-way communication with users. In addition the terrestrial system is much more limited than satellite-dish and Internet. The digital terrestrial system was conceived before interactivity such as YouTube, MySpace and Facebook took off.

Another prominent critical voice belongs to Associate professor Tanja Storsul, University of Oslo. In an interview in *Dagbladet* 2 May 2007, it is noted that the "free" channels are disappearing with DTTV. The license fee-based NRK (an annual license costs more than 2,000 NOK) may prove to be the only "free" channel left when DTTV is fully introduced. Riks-TV, which has the exclusive right to distribute channels in the new DTTV network, is obliged to offer TV2 free until its license expires at year-end 2009. From 2010, TV2 has made it clear that it will be shifting to pay-TV. This leaves the three NRK channels as the only "free" channels offered provided the license is paid. Tanja Storsul argues that Norway is the only

country in Europe where analog switch-off and digital rollout means a reduction of free channels. In countries that Norway traditionally compares itself with, like Sweden and the UK, the opposite is taking place. In Sweden, the government took more active part in the development of DTTV, contributing financially. This allowed them to influence the channel system. In Norway, the government announced objectives (cf. MBO) and then let private companies take the entire risk and cost of developing DTTV. Pay-TV, therefore, may be the price the Norwegian consumers must pay for insufficient government involvement. Instead of DTTV for everyone, we are left with pay-TV for everyone, according to Storsul.

Soria Moria Declaration and Broadcasting in a Digital Future

In September 2005, the Conservative minority coalition government led by Prime Minister Kjell Magne Bondevik of the Christian People's Party lost the general election. In October 2005, a majority coalition government came to power, headed by Prime Minister Jens Stoltenberg of the Labour Party. For the first time in many years Norway got a majority government. And for the first time ever, The Socialist Left Party was in government, putting radical pressure on the Labour Party on several issues. This is also noticeable in the issues of public broadcasting and DTV policy. In its joint "Soria Moria Declaration" policy platform of December 2005, which sets out government policies on a broad range of issues, media policy was defined in terms of:

- Ensuring freedom of expression, due legal process and a living democracy.
- Resisting uniformity and stimulate variation, quality and Norwegian ownership.
- Maintaining public radio and TV broadcasting with clear commitments to broad and narrow receiver groups.
- Retaining NRK (the Norwegian Broadcasting Corporation) as a license fee based, non-advertising public broadcaster and promote its role as a disseminator of culture, language and national identity. NRK's district offices are to receive good development possibilities.

In May 2007, The Ministry of Culture and Church Affairs presented a White paper to Parliament, *Broadcasting in a Digital Future* (St. melding 30, 2006-2007). This document sets out government policy regarding the Norwegian Broadcasting Corporation and several other issues related to public and commercial broadcasting. The document lists the goals set out above, and in addition specifies a number of policy priorities bearing on digital-TV (of which only the most pertinent are listed below):

- EU legislation: Re-negotiation of the EU TV directive will include all audiovisual media services independent of delivery platform. EU legislation on state subsidies, competition rules, electronic communication and electronic commerce regulations as well as intellectual property rights will affect Norway.
- Public broadcasting: an unregulated TV market with a large number of competitors cannot secure satisfactory public broadcasting services. There is accordingly still a need for public regulations to secure public broadcasting in Norway, without advertisements and marketing. NRK is retained as a state-owned license fee based

public broadcaster. NRK need not be the only company offering public broadcasting services in Norway. The government will consider offering a commercial broadcaster distribution rights in the terrestrial system from 2010 when TV2's license expires.

- Commercial activities: NRK is permitted – but only through its subsidiaries – to engage in commercial activities, including with businesses outside media, provided the board of NRK gives its approval.
- Sponsors, charging for SMS: NRK can, as previously, identify sponsors through immobile placards and can sell spin-off products and SMS services. Caution must be demonstrated in exerting commercial pressure on viewers, esp. programs for children and youths.
- New media: NRK should as far as possible engage in new media, but advertising, e-commerce and other services aimed at profit maximization are not part of the public broadcasting mission.
- Internet: NRK should offer most of its archived radio and TV productions as well as current productions through the Internet, normally free of charge.

In response to the critical voices noted above, and anticipating that TV2 will not renew its commitments as a public broadcaster from 2010, the Minister of Culture and Church Affairs also stated the government's "strong desire" to have, in addition to NRK, a Norwegian public broadcaster offering viewers non-commercial content. But efforts to attract TV companies to apply for a license to provide a free channel with full distribution rights in both the digital terrestrial network and cable networks have so far been futile. In the TV business nobody seems interested, and these plans are met with considerable skepticism. Several view the Minister's statements as tactics to deflect criticism that DTTV is proving too expensive. Others point to the MTC's refusal to allow MTG to send Viasat 4 free, similar to TV2. In June 2007, Riks-TV, which as noted has the exclusive right to distribute channels in the new DTTV network, presented its choice of channels, favoring the owners NRK, TV2 and Telenor. The choice of channels excluded BBC and Swedish TV channels. This has caused a storm and Riks-TV has since relented and agreed to include BBC. But many Norwegians are baffled that the state-controlled DTTV excludes Swedish television channels which several generations of Norwegians have been accustomed to watching free.

Key Challenges and Issues Ahead

Among the challenges and issues ahead are private commercial distributors and the important forces of marketing and advertising. Although an important argument in the formulation of a national policy was that DTTV would offer national public broadcasters better survival possibilities than leaving the field to commercial digital satellite and cable operators, the latter have not been idle. In 2007 the "buzz-word" is HDTV, and a number of commercial distributors of cable, satellite and Internet-based suppliers are active in the Norwegian market. These include Canal Digital (owned 100% by Telenor), Viasat (owned by MTG AB), Canal+ (owned by SBS Group) and Get (owned by Candover).

Advertising and marketing are important driving forces behind the development of commercial TV, and hence also digital-TV. Advertisements provide an increasing share of revenue for many distributors, and in Norway we now see that DTV distributors are launching

aggressive ad campaigns to win market shares. Director Roar Sletner, The Association of Norwegian Media Agencies (ANMA), estimates 16 May 2007 that the annual turnover of the Norwegian advertisement market is in the range of 25 billion NOK. This market is equally split between brand and classified marketing. In 2006 brand advertising amounted to 6.5 billion NOK. The two dominating media channels for brand ads were daily print newspapers (36%) and TV (35%). Other media had substantially lower market shares: weeklies/magazines (7%), Internet (including electronic newspapers) (6%), radio (5%), outdoor placards (3%), and direct marketing (3%) (ANMA 2007). General manager Børge Sandengen, Interest Organization for Interactive Marketing (INMA), estimates 16 May 2007 that in 2006, Internet marketing in Norway totaled 2 billion NOK. Brand marketing was roughly 1 billion NOK and classified marketing amounted to 300 million NOK (INMA 2007).

Advertising and marketing are also important in the diffusion of innovations perspective. All stakeholders competing in the HDTV market have employed one or several professional marketing agencies. Get uses McCann, Canal Digital uses Grey, and Riks-TV uses Bates/Omnicom group's PHD. Riks-TV plans to launch a large and expensive advertisement campaign this year. Competition among Canal Digital, Get, Viasat and Riks-TV is fierce. At stake are an estimated 500,000 - 800,000 TV viewers. Over the next few months they must make decisions on how they want to watch digital-TV. The campaign slogan of Riks-TV is "Digital-TV with an ordinary antenna." The intention is to improve customer knowledge of products before presenting channel content and products. The campaign will rely on a mixture of print and net-based ads in national and regional dailies plus TV-ads. Riks-TV believes that digitization is complicated and may frighten consumers. Their message and product are simple, designed to communicate in simple terms a simple solution. Switchover to digital-TV should not be complicated and Riks-TV wants customers to remember that (Hauger, 2007).

Summary

The Norwegian TV landscape structure is undergoing considerable change with analog shutdown and digital rollout from 2007-2010, and there are a number of stakeholders -- public and private. The situation is characterized by the spread of market-driven DTV and pay-TV on the one hand while the government is advocating a DTTV policy on the other hand. The government has become more vocal and interventionist with the access to power in October 2005 of a majority government. But the minority government "laissez-faire" policy from 1999-2005 has had its price, and leaving the market to implement government policy is a course that is now proving hard to change for the very active and interventionist Minister of Culture and Church Affairs, Mr. Trond Giske. DTTV is seen by many as an obsolete technology with a price tag of 1.3-1.5 billion NOK. Some critics claim the Norwegian government's policy has failed, and that the average viewer-consumer is the big loser. Marketing and advertising are powerful driving forces, favoring commercial broadcasters over public broadcasters. In a world where "narrowcasting" and pay-TV is becoming normal, license fee-based public broadcasters are hard pressed by the many pay-TV suppliers. Although the government launched a third license fee based channel (NRK3) on September 1, 2007, there is no indication yet of a second public commercial TV broadcaster in 2010 when TV2's license expires and they turn to pay-TV. It is still unclear, as we write this paper, whether roughly 600,000 Norwegians in the autumn of 2007 will choose DTTV or switch to

one of the alternative platforms: cable-TV, satellite/dish or IPTV.

Conclusion

The paper has identified key stakeholders and structures in China and Norway regarding government policy formulation of digital TV. DTV (and DTTV in Norway) represent considerable challenges to the governments, enterprises and populations of China and Norway, two countries that are very different and yet so alike in several ways. Both countries face a need to weigh public interest and state broadcasting services against market-driven pressures, viewership preferences and affordability ushered in by globalization, economic progress and technological advancement. Closer comparative analysis of institutions and stakeholders (especially the state broadcasters CCTV and NRK) as well as audiences (especially urban elites and trendsetters) are now the next likely units for further analysis.

Notes

¹ A first version of this paper was published as Wang, Y. & Vaagan, R. (2007). "National DTV policies in China and Norway". In *Collections. China Forum 2007* (pp.101-119). Beijing: National Center for Radio and Television Studies at Communication University of China.

References

- ANMA - Association of Norwegian Media Agencies (2007). Retrieved May 14, 2007 from: <http://www.mio.no/>
- Aslama, M. & Syvertsen, T. (2006). Policies of reduction or renewal?: European public service broadcasting in the new media era. In Carlsson, U. (Eds.). *Radio, TV & Internet in the Nordic Countries: Meeting the challenges of new media technology* (pp.29-41). Nordicom: Göteborg University.
- Bignell, J. (2004). *An introduction to television studies* (2nd ed.). London: Routledge.
- Bolin, G. (2005). En form av television: Globalisering av nationell TV-kultur [A kind of television: Globalization of national TV culture]. *Mediekultur*, 39, 38-49
- Bruhn, J. K. (Eds.). (2002). *A handbook of media and communication research: Qualitative and quantitative methodologies*. London: Routledge.
- Carlsson, U. (Eds.). (2006). *Radio, TV & Internet in the Nordic countries. Meeting the challenges of new media technology*. Nordicom: Göteborg University.
- Christensen, T., Læg Reid, P., Rones, P.G. & Røvik, K.A. (2004). *Organisasjonsteori for offentlig sektor.: instrument, kultur, myte* [Organization theory for the public sector: instrument, culture, myth]. Oslo: Universitetsforlaget.
- Cottle, S. (2003). TV journalism and deliberative democracy: Mediating communicative action. In Cottle, S. (Eds.), *News, public relations and power* (pp.153-170). London: Sage.
- Croteau, D. S. & Hoynes, W. (2006). *The business of media: Corporate media and the public interest*. Pine Forge Press: Thousand Oaks, London, New Delhi.
- EU - European Commission (2005). *Communication on accelerating the transition from analogue to digital broadcasting*. COM 2005 (204 final) Brussels 24 May 2005.

- FFC – Federal Communication Commission (2007). *DTV - Digital television*. Retrieved September 23, 2007 from: <http://www.dtv.gov/>
- Hu, J. (2005). Building harmonious society crucial for China's progress. *People's Daily*. Retrieved September 24, 2007 from: http://english.peopledaily.com.cn/200506/27/eng20050627_192495.html
- Harrie, E. (Eds.). (2006). *Radio, TV & Internet: Descriptive analyses and statistics*. Nordicom: Göteborg University.
- Hauger, K.K. (2007). Reklamekrig om digital-TV [Advertising war about digital TV]. *Kampanje*, May 5, 2007. Retrieved May 14, 2007 from: http://www.kampanje.com/markedsf_ring/article55209.ece
- Hirst, M. & Harrison, J. (2007). *Communication and new media: From broadcast to narrowcast*. Oxford: Oxford University Press.
- Holmes, D. (2005). *Communication theory: Media, technology and society*. London: Sage.
- INMA - Interest Organization for Interactive Marketing (2007). Retrieved May 16, 2007 from: <http://inma.no>
- Innst. S. nr. 128 (2003-2004). *Innstilling fra familie, kultur- og administrasjons- komiteen om digitalt bakkenett for fjernsyn* [Recommendation by the parliamentary committee on family, culture and administrative affairs regarding digital terrestrial TV network]. Retrieved May 14, 2007 from: <http://www.stortinget.no/inns/2003/inns-200304-128.html>
- Iosifidis, P. (2006). "Digital switchover in Europe". *The International Communication Gazette*, 68(3), 249-268.
- Langer, J. (2003). Tabloid television and news culture: access and representation. In Cottle, S. (Eds.), *TV journalism and deliberative democracy: Mediating communicative action* (pp.133-152). London: Sage.
- Law on electronic communication (Ekomloven) (2003). Retrieved May 14, 2007 from: <http://www.lovdata.no/all/nl-20030704-083.html>
- Leiva, M. T. G., Starks, M. & Tambini, D. (2006). Overview of digital television switchover policy in Europe, the United States and Japan. *Info*, 8(3), 32-46.
- MCCA - Ministry of Culture and Church Affairs. St.melding 44 (2002-2003). *Om digitalt bakkenett for fjernsyn* [White Paper to Parliament on digital terrestrial TV network]. Retrieved May 14, 2007 from: <http://www.odin.dep.no/dok/stmeld/043001-040004/dok-bn.html>
- MCCA - Ministry of Culture and Church Affairs. St.melding nr. 30 (2006-2007). *Kringkasting i en digital fremtid* [White paper to Parliament on broadcasting in a digital future]. Retrieved October 5, 2007 from: <http://www.regjeringen.no/nb/dep/kkd/dok/regpubl/stmeld/2006-2007/Stmeld-nr-30-2006-2007-.html?id=466242>
- MCCA - Ministry of Culture and Church Affairs (2007). Retrieved May 14, 2007 from: <http://www.regjeringen.no/en/dep/kkd.html?id=545>
- MTC - Ministry of Transport and Communications (2007). Retrieved May 14, 2007 from: <http://www.regjeringen.no/en/dep/sd.html?id=791>
- Nordig (2007). Retrieved May 14, 2007 from: <http://www.nordig.org/>
- Norsk Televisjon AS (2007). Retrieved May 14, 2007 from: <http://www.norgestelevisjon.no/>
- Norsk Telecom (2007). Retrieved May 14, 2007 from: <http://www.teleinfo.no/?id=7>

- Norwaco (2007). Retrieved May 14, 2007 from: <http://www.norwaco.no/>
- Norwegian Post and Telecommunication Authority (2007). Retrieved May 14, 2007 from http://www.npt.no/portal/page/portal/pg_npt_no_en/pag_npt_en_home
- RiksTV AS (2007). Retrieved May 14, 2007 from: <http://www.riksstv.no/>
- SARFT - State Administration of Radio, Film and TV, Beijing (2000-2004)
Transition plan of the digitization of satellite broadcasting (2000)
Work outline of the radio, film, TV in 2003 (2003a)
Transition Time Schedule of the Cable TV Digitalization in China.(2003b)
Implementation advice on establishing new system of cable digital TV technology (2003c)
Work Outline of the Radio, Film and TV Development Year (2004a)
10th five-year plan of radio, film and TV technology and plan of 2010 prospect (2004b)
Circular on Speeding up the Surveillance Platform Construction of Cable Digital TV (2004c)
Guideline of the Cable DTV Service Platform Construction (2004d)
- St.melding 44 (2002-2003). Retrieved October 5, 2007 from:
<http://www.regjeringen.no/nb/dep/kkd/dok/regpubl/stmeld/20022003/Stmeld-nr-44-2002-2003-.html?id=197213>
- St.melding 30 (2006-2007). *Kringkasting i en digital fremtid [Broadcasting in a digital future]*. Retrieved October 5, 2007 from:
<http://www.regjeringen.no/nb/dep/kkd/dok/regpubl/stmeld/2006-2007/Stmeld-nr-30-2006-2007-.html?id=466242>
- Syvvertsen, T. (2004). *Mediemangfold: Styring av mediene i et globalisert marked* [Media pluralism: Managing media in a globalized world]. Kristiansand: IJ-forlaget.
- Vaage, O. F. (2007). *Norsk Mediebarometer 2006* [Norwegian media barometer 2006]. Oslo/Kongsberg: Statistisk sentralbyrå.
- Williams, K. (2003). *Understanding media theory*. London: Hodder Arnold.
- Wang, Y. & Vaagan, R. (2007). National DTV policies in China and Norway. In *Collections. China Forum 2007* (pp.101-119). Beijing: National Center for Radio and Television Studies at Communication University of China.
- Wang, L. (2005). *The current development, policy and guide and future tendency of the digital TV*. Speech on China's Digital TV at Industry Summit.
- Zhou, T. (2007). *SARFT set a standard for cable television digitization*. Retrieved May 2, 2007 from: <http://www.xinhua.net>

This is a list of digital television deployments by country, which summarises the process and progress of transition from analogue to digital broadcasting. The transition to digital television is a process that is happening at different paces around the world. Although digital satellite television is now commonplace, the switch to digital cable and terrestrial television has taken longer. See also Digital terrestrial television. The development of digital television - cable, satellite or terrestrial - has been associated more with hype than with realistic estimates, and, most importantly, has not taken the reaction of the viewers into account (Papathanassopoulos 2002).

2. Futures of television. The case of digitalizing the terrestrial network in Norway. Political and economic concerns Power perspective. Norges television as. Owners: Telenor, NRK and TV2 Licence: To develop and maintain a digital terrestrial television network. Capacity: 3 MUX in the first round Companies: NTV (network and free television) and NTV+ (Pay TV) Launch services: Fall 2007 Funding: Market. No public funding.

4. Power in digital TV. Contents Channels Networks Packaging SMS End users. Rights DRMs. Television was not invented by a single inventor, instead many people worked together and alone over the years. And all of them contributed to the evolution of television. Inventors from all over the world had been working on transmitting pictures or objects onto a screen since the 1830s, but the first physical television wasn't developed until the 1900s. Five men became the most popular and prestigious inventors of what we know today as television. Publicado en Uncategorized | Etiquetado History, Invention and Innovation, Television | Deja un comentario. The invention of television.