DIGITAL TELEVISION AS A NEW TECHNOLOGY: THE ADOPTION OF DIGITAL TELEVISION IN TURKEY

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
MEDIA AND CULTURAL STUDIES

SEPTEMBER 2006

Approval of the Graduate School of Social Sciences

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ABSTRACT

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THE ADOPTION OF DIGITAL TELEVISION IN TURKEY

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M. S., Media and Cultural Studies Master Program

Supervisor: Prof. Dr. A. Raşit Kaya

September 2006, 106 pages

Analog television systems are rapidly being replaced by digital television systems accross the world. Turkey is not an exception to this development since the government has recently decided to shut-down analog television transmission across the country by 2016. In this context, subject matter of this study is the adoption of digital television in Turkey. And the study's main aim is to understand and explain the economical and political rationale behind the conversion to digital television.

In the switch process to digital television, digital television has been presented as a new "revolutionary" technology which is primarily to enhance the television "service" for viewers by the champions of the process and the governments. However, this study takes a critical position against this argument and argues that the adoption of digital television is primarily shaped by the commercial stakes of private broadcasting organisations and administrative concerns of governments. In this respect, this thesis argues that even though the digital television has technical superiorities to analog television systems which facilitates the introduction more television channels with higher audio-visual quality, the adoption of digital television does not include any project to improve the quality of television content, the equal access to information in the society and thus citizenship in a democratic society. Quite the contrary, since digital television facilitates and improves pay television implementations, digital television seems to deteriorate the imbalance in the society in accessing the information. It is therefore necessary to put "reserve" on the expectations from digital television.

To articulate this thesis, different national contexts including USA and Britain as leading countries and Turkey in digital television conversion process are dealt with in the study. Firstly, the American and Britain experience of digital television which does not exclude the European context are examined in terms of common developments as well as the pecularities of the countries concerning to switch to digital television. Lastly, in the framework given above, the developments as to the digital television in Turkey are examined in detail. As well as the assessments about recent developments as to the issue, interviews carried out with the representatives of the broadcasting industry and regulatory authorities are also included in the analysis. Hence, this study should be considered as a descriptive research which aims to contribute the academic efforts to develop a conceptual framework to the digital television debate in Turkey.

Key Words: Digital television, digital interactive services, frequency allocation, commercialization of broadcasting

ÖZ

YENİ BİR TEKNOLOJİ OLARAK SAYISAL TELEVİZYON:
TÜRKİYE'DE SAYISAL TELEVİZYONUN KULLANIMA SUNULMASI

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Eylül 2006, 106 sayfa

Dünyada sayısal televizyon sistemleri hızla analog televizyon sistemlerinin yerini almaktadır. Hükümet kısa bir süre önce 2016'ya kadar analog yayınlara son verilmesine karar verdiğinden Türkiye de bu sürece dahildir. Bu bağlamda bu çalışmanın konusunu Türkiye'de sayısal televizyonun kullanıma sunulması oluşturmaktadır. Çalışmanın esas amacı ise sayısal televizyona geçişin gerisindeki ekonomik ve politik mantığı anlamak ve açıklamaktır.

Sayısal televizyona geçiş süreci içerisinde, sürecin taraftarları ve hükümetler sayısal televizyonu öncelikli olarak izleyicilere sunulan televizyon "hizmetini" geliştiren "devrimci" yeni bir teknoloji olarak sunmaktadırlar. Bu tez çalışması ise bu argümana karşı eleştirel bir duruş almakta ve sayısal televizyonun kullanıma sokulma sürecinin öncelikli olarak özel yayıncı kuruluşların ticari çıkarları ve hükümetlerin yönetsel ilgileri ve endişeleri tarafından şekillendirildiğini savunmaktadır. Bu açıdan bu tez çalışması sayısal televizyonun daha yüksek ses ve görüntü kalitesiyle daha çok kanalın yayın yapmasına olanak sağlayan teknik üstünlükleri olsa bile, sayısal televizyonun kullanıma sunulmasının televizyon içeriğinin kalitesini artırmaya, enformasyona eşit erişimi kolaylaştırmaya ve böylece demokratik bir toplumda yurttaşlığı geliştirmeye yönelik herhangi bir amaç içermediğini savunmaktadır. Tam tersine sayısal televizyon teknolojisi paralı televizyon hizmetlerinin sunumunu geliştirdiğinden, toplumdaki enformasyona erişimlerindeki eşitsizliği daha da derinleştirecektir. Bu nedenle sayısal televizyona ilişkin beklentilere bir "rezerv" koymak gerekir.

Bu tez çalışmasında; Amerika Birleşik Devletleri ve Avrupa bağlamı içinde İngiltere sayısal televizyon konusunda iki lider ülke olarak incelenmiştir. Bu ülkelerde sayısal televizyona ilişkin ortak gelişmeler yanında ülkelerin kendi özgül koşulları ve gelişmeleri de ele alınmışıtır. Daha sonra, belirtilen çerçeve içerisinde Türkiye'de sayısal televizyonun gelişimi ayrıntılı olarak incelenmiştir. Son gelişmelerin değerlendirilmesi yanında, sektör ve düzenleyici örgüt temsilcileri ile yapılan görüşmeler de inceleme sürecine dahil edilmiştir. Bu nedenle, bu tez çalışması Türkiye'de sayısal televizyona ilişkin tartışmalara bir çerçeve kazandırma amacı güden betimleyici bir araştırma olarak değerlendirilmelidir.

Anahtar Kelimeler: Sayısal televizyon, sayısal etkileşimli hizmetler, frekans tahsisi, yayıncılığın ticarileşmesi

ACKNOWLEDGMENTS

First of all, I'm deeply grateful to my supervisor, Prof. Dr. A. Raşit Kaya for his significant contributions and assistance in the preparation of this study. He was always so understanding and positive in every stage of my graduate study.

I would like to thank my examining committee members, Prof. Dr. Bülent Çaplı for his crucial support and suggestions in every stage of this study, and Dr. Barış Çakmur for his valuable suggestions and sincere comments.

I also would like to thank Dr. Berrin Balay Tuncer and GİSAM personnel for their valuable contributions.

Finally, I would like to express my gratitude to my wife, mother, father and sister for their unconditional support in the preparation process of this thesis.

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CHAPTER 1

INTRODUCTION

Digital television, as a widespread new technology, is becoming a global standard for the infrastructures of television systems. As a matter of fact, in many countries this "new" broadcasting technology is either being adopted or is about to be adopted. The situation in Turkey is not an exception since the Government has already annouced its decision to convert Turkish Broadcasting System into this new technology.

The proponents of the ongoing process seem to underlie some features of this "new" technology both as the motive and evidence of the claimed "revolutionary changes". In this respect, it is advanced that digital television technology provides the possibility of an increased multichannel capacity, a quality of interactivity, an immunity to interference by other sources of signal and better audio-visual quality, and a quasi-universal interoperability with other media that recognize digital language.

The subject matter of this study is the adoption of digital television in Turkey. It is aimed to dwell upon this process of adoption within a comparative framework and elaborate on the circumstances and underlying reasons of this shift to the new technology in order to disclose if the claimed promises are justified.

The mainstream assesments as to this shift attributes it to the intrinsic characteristics of the technology esteemed to offer new possibilities and capacities to its users. However, at the outset of this study it is thought that this shift can not be understood without reference to its articulation with socio-economic and political vested interests. In other words, it can not be wholely understood and explained unless it is placed into the context of changes in the communications landscape since the prevailing neo-liberal hegemony was established in 1980s.

It is widely accepted that communication environment has undergone a deep transformation since 1980s. Even if, the technological progress has actually been at the source, this change has primarily been directed by economic and political forces. The direction of the

change has been a continuous expansion of the media infrastructures and a rapid increase in media outlets and products. And the "revolutionary" capacity attached to digital television refers explicitly to this media expansion. On the one hand, digital television represents the "convergence" of infrastructure of broadcasting with information and communication industry. On the other hand, digital television provides an increased channel capacity, as well as new revenue-generating services.

In this context, some particular commercial stakes play key role in the development of digital television. However, ". . . it is quite natural and legitimate that those who own such industries see and seek increased opportunities for profit in the development of the media environment". By the same token, "in the face of enriched media environment, 'citizens' would expect that they will obtain more and easier access to information about public affairs and thus better opportunities in a democratic society" (Kaya 1994: 384). In this respect, digital television like many other previous innovations holds out a promise for better public service with regards to increased cultural diversity. Yet, if necessary measures are not taken against commercialism and the expansion of big business corporate interests, such an innovation can well be a threat against broadcasting as a public service. Therefore, the protection of democratic rights in the digital era should have a priority among the main concerns of an administration. However, an attentive scrutiny of the transition to digital television in different national contexts displays that actions and inactions of governments and regulatory authoritives primarily facilitated the big broadcasting corporates' interests.

In order to attain the above stated goals, this study is organized as follows: Chapter 2 offers a brief examination of the digital television technology with an attempt to explain and discuss its intrinsic features and the claims evoked around it. Chapter 2 also provides some insights over the policy matters raised by the advent of this transition to digital television. It is followed by a brief historical account of the process including the development of digital television as a technological context; the first phase in mid 1990s when it becomes policy issue in its context, and lastly the rise of pay satellite television platforms as the first outcome of the introduction of digital television into television systems.

The study will progress through a detailed examination of the experiences of certain countries concerning to the transition to digital television. This is hoped to provide data and some basis for analysis regarding the needed decisions for the regulation of this transition. In this respect, USA is chosen as the first country for examination. Apart from being one of

the pioneering countries, its overwhelming dominance over the global communications industry is thought to provide the justification for this choice. As a matter of fact, USA as the driving force provides the model for shaping of the policies and needed regulatory decisions. Secondly, the debates and policy implementations in the European Union is selected to present vivid dimensions of the debate. Moreover, Turkey's claim for membership of the E.U. compells the Turkish authorities and concerned bodies to take into consideration European experiences. In European context, England is chosen as the second country for examination. This country is also among the pioneering countries in terms of transition to digital television. As a matter of fact, England is now reached to the highest digital penetration level in the world, by converting 60 per cent of total television households into digital television technology. Furthermore, since England is a terrestrial television country in which most of the television households have terrestrial television connection, England's experience is thought to provide well contribution to the debates as to the transition to terrestrial digital television which takes place at the heart of Turkish digital television agenda.

Chapter 4 examines the development in Turkey as to the adoption of the digital technology as the basis of standard for television broadcasting. For this purpose, a brief account of the radical transformation of Turkish media environment is taken as the context for analysis. It is followed by a scrutiny of the decisions and declarations of the public authorities and concerned bodies. This is complemented with in depth interviews of the public officials and representatives of the private stake holders.

The study ends with a concluding chapter which provides a discussion of the subject matter within a comparative framework. The primary outcome of the thesis is that the adoption of digital television does not represent any profound change in the field of communication. Rather, digital television refers to a technological change to respond some marketing considerations of broadcasters and expand the range of new opportunities for profit in broadcasting.

CHAPTER 2

DIGITAL TELEVISION AS A NEW TECHNOLOGY

Today, it is widely accepted that we are clearly living in the age of communication "revolution". Sophisticated satellites have created new communications nets, information ranging from voice to video is relayed in the form of light, and personal computers have forever altered the way we work. At the center of the process is digitisation[1].

Once a signal is digitized, it becomes 'data'. And these 'data' can be processed by computers. Thus, every kind of information from text-based massages to images is changed into same language of computers. This provides important opportunities: First, 'data' consisting of '0's and '1' can be compressed according to advanced formulations of compression[2]. Thus, information occupies less amount of bandwidth when it is digitally sent. Moreover, compressed data into very small spaces can be accessed at very high speeds and can be manipulated far more easily than analogue formats. Secondly, digital signals are multiplexed signals and these multiple signals can be relayed on a single communication line. In other words, since every kind of information from audio signals to still images are in the same form of 'data', these data can be transmitted and retransmitted on a single communication line at the same time. Thus, previous distinctions between broadcast (point-to-mass) and telecommunication (point-to-point) ceased to be. Through a modulator and demodulator, 'data' is relayed over a standard voice-grade telephone line. Under normal conditions, telephone lines cannot carry for example television signals, but by this technological progression it became possible. Lastly, digital transmitting is closed to "noise" that distort the coming signal. In other words, digital transmission enhances the quality of signal.

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[1] The electromagnetic spectrum is the entire collection of frequencies of electromagnetic radiation, ranging from radio waves to x rays to cosmic waves. We use electromagnetic spectrum as a communication channel to relay both analog and digital information. Analog signal is continuous and converting of acustic and light wave into electrical signal. Digital signal is non-continuous and using a sequence of numbers to represent information. For further information please see Mirabito 1994, p.10

[2] For example, any image being framed by the video camera is coded pixel by pixel according to color values. Depending on the compression program, this image to be sent is first scanned and than compressed by omitting repetitive color values from the signal's code map. And when it is received by a digital receiver the image is reproduced by reading codes. In other words, what is sent is not that image's electric reflection but some certain codes.

So, digitisation creates the conditions for transmitting and storing very high quantities of data, very fast access to and processing that data. With these advantages digital technology has been presented to wide social use especially in 1990s. The diffusion of personal computers sped up in 1990s and Internet became a global phenomenon in this decade. From (mobile) phones to simple watches and even to washing machines, every kind of consumer electronics products began to benefit from the digitalisation in one way or another. Digitalisation of communication infrastructures has been the central part of this process.

In this respect, digital television represents the digitalisation of infrastructures of broadcasting systems and it brings about many 'advantages' for television broadcasting. However, there also emerge many 'concerns' as to the adoption of digital television for the television system infrastructures.

2.1 Advantages of Digital Television and Claims Evoked Around It

As explored above, it is a fact that the 'digitization' provides certain advantages to users of this technology. In respect to digital television, its advantages over analog television are more effective use of the spectrum, ability to increase the number of channels available with higher sound and image quality, effectiveness in reducing operating costs and versatility in converging with telecommunications providing a wide range of interactive services.

From cellular phones to police scanners, from television sets to garage-door openers, virtually every wireless device depends on access to the radio frequency wireless spectrum. Because of unalterable physical realities, the radio spectrum is fixed in extent and access to spectrum is limited since the ineffectiveness of analog transmission. And, as the increased utilization of radio spectrums is concomitant of growing communication industry, the problems of spectrum use is also intensifying.[3] This is an obtrusive problem in television broadcasting, especially in big cities where several numbers of television tranmitters are located. In the first place, digital television is estimated to provide a solution to this deep rooted problem of bandwidth conservation. By coding television signals into 0s and 1s, the portion that the television signals occupy in the spectrum is compressed. And thus, any

[3] The difficulties arising have two critical aspects: electromagnetic pollution and interference. Electromagnetic pollution is stemming from radio energy radiated other than as a necessary part of a legitimate transmission. By contrast interference occurs when two or more transmissions reach the receiver at the same time. For further information see Gosling, 2000

digital television channel occupies far less spectrum than its analog counterpart does. Thanks to digitization, technical impediments to channel supply ceased to be a problem. Consequently, if some appropriate measures are taken through an effective spectrum planning the cost of transmission would also be definitely reduced.[4]

However, whatever may the other new qualities attributed to digital television, none of them compares to its promise of 'interaction' in television broadcasting. As a matter of fact, "where 'old-analog' communication-television offers passive consumption digital one offers *interactivity"*[5](Lister and the others 2003: 19). Digital television is a hybrid form of classical television content and Internet communication (Lugmayr and the others, 2004: 2). Moreover, digital television realizes new generation of teletext services including the availability of high-resolution graphics, improved formatting capabilities, and a larger bandwidth available for carrying any kind of data. It thus helps viewers to enjoy modern multimedia services on a traditional platform with radical changes in the structure and scope of services available.

To resume, it is claimed that digital television viewers can now (Grimme, 2002) :

- pay for events and order at any given time a program from the archive
- play games on the television

[4] By digital production equipment such as digital cameras and digital non-linear editing systems both shooting and editing time is shortened and production cost declines with superior image and sound quality. Besides, for example while analog terrestrial transmission needs more than one emission points for all television channels to be transmitted, digital terrestrial transmission needs only one emission antenna for all channels to be transmitted. And this also reduces operation costs.

[5] As is briefly noted digital technology offers users a significant opportunity to manipulate and to intervene into the communication process. These opportunities are often referred to as the 'interactive' potential of digital technology. However, interactivity has become a broad term which carries a cluster of associated meanings. These meanings operate at two levels, one **instrumental** and the other **ideological**. In the context of instrumental level, being interactive signifies the users' ability to directly intervene in and change the images and text they access. So the audience becomes 'user' rather than 'viewer'. This intervention of user actually subsumes other modes of engagement such as 'playing', 'experimenting', and 'exploring', under the idea of interaction. However, at the ideological level, interactivity is understood as one of the key 'value added' characteristics of the digital media. In this sense, the term interactivity stands for a more powerful sense of user engagement with media texts, a more independent relation to sources of knowlegde, individualised media use, and greater user choice. "These ideas about the value of 'interactivity' draw upon the popular discourse of neo-liberalism which treats the user as, above all, a consumer. Neo-liberal societies aim to commodify all kinds of experience and offer more and more individualized lifestyle choices from a never-ending array of possibilities offered by the market. This ideological context then feeds into the way we think about the idea of interactivity in digital media."(Lister and others, 2003: 19-20) Therefore, what is hinted at the connection between instrumental definitions and ideological meanings is that wide field of possibility suggested by the idea of interactivity is in a form most suitable for commercial development.

- shop
- vote
- access the Internet
- get complementary information about the programs

By the same token, with these potential features digital television offers a wide range of opportunities for broadcasters from a business point of view: Above all, with far more bandwidth, an increased number of channels are available now. Besides, this bandwidth capacity allows pay-per-view events and movies, as the digital conditional access system (CAS) is more sophisticated then its analog counterpart, in terms of controlling the viewer activity. This also provides an opportunity to increase the revenues charged from individual customers. In this respect, as a very important aspect, the digital system allows its viewers access to interactive entertainment applications like computer games on television, as well as shopping and other interactive *commercial* activities. Furthermore, digital systems have the ability to upgrade their features and services by upgrading their software from the satellite or internet lines (Griffiths 2003: 9).

Among these probable new 'revenue-generating applications', that the digital television offers users which is crucial importance, is the opportunity of choosing any program of their choice from a broad archive database; such a possibility gives broadcasters new prospects for packaging and marketing traditional television content. This possibility gives broadcasters new opportunity for packaging and marketing traditional television content. Pay-per-View (PpV) and Video-on-Demand (VoD)[6] are two new predictable services in this context. Through the pay-per-view and video-on-demand, television content is now individually marketed and consumed. This implies that viewer/user is now becoming the primary source for the finance of television broadcasters[7].

[6] Video on Demand is the most promisable innovation in the digitalization process of television. However, because of lack of broadband transmission infrastructure, it seems to be available in near future. For the time being, its examples are to be found increasinly in the internet environment.

[7] Traditionally, final consumers of symbolic commodities produced by media are not the fundamental resources of revenue for producer corporations (media institutions). Instead, fundamental revenue resources are advertising givers and sponsorship institutions. After satellite and cable communication were widely adapted to social use in a way to include pay television applications, this situation of television economics had begun to change to some extent. However, digitalisation of television including new interactive applications and new pay television applications like pay per view and video on demand, this basis seems to have changed radically. Now there is a real potential to market and sell the programmes (symbolic commodities) individually.

This situation seems quite natural because of the fact that there are two driving forces for broadcaster organizations and other media companies to invest in digital technology. The first is the belief that viewers can be persuaded to pay much more for certain television content: through extra channel choice, charging for top-ranked programs in ratings, first release films and 'adult' content. In other words, there is an assumed potential for *surplus* revenue that analog television can not exploit. Secondly, there is a conviction that television as the most ubiquitous household consumer device, will create a pipeline for a new variety of lucrative interactive services based on infrastructures of information (Levy, 2001: 3).

As a matter of fact, expectations of investors are based on above underlined claims intrinsic to the digital television. Indeed, it is claimed by neo-classical economists digital television will end 'the market failure'[8] of broadcasting. The opportunity of selling the content to viewer directly presents a new way of *capital accumulation* for television broadcasters. As a result, it is argued that in a digital environment characterized by effective content pricing, it is thought that market failure ceases to be for broadcasting.

However, as Geray points out, scholars of free market ideal ignores that market failures can not be totally overcome by digitisation. Especially, in terms of reaching social targets, market failures will continue to exist as it existed for traditional terrestrial broadcasting. At least, it can be argued that the problems stemming from the commercial broadcasting will continue to exist. For instance, as commercial broadcasting history indicates, the viewer

[8] According to neo-classical economics, market can fail in providing economic effectiveness and in reaching social targets such as democracy and social cohesion, unless it is controlled and regulated. 'Market failure' appears where free market can not operate properly and present goods and services effectively. And 'market failure" exists inevitably in 'public goods', due to the fact that such nobody can be excluded from reaching such goods. In this respect, there are two kinds of 'market failure' as to the broadcasting. First, traditional broadcasting can not provide economic effectiveness unless it is regulated. Because, traditional broadcasting is regarded as being in the field of 'public good' because of the fact that whoever has got a simple antenna and receiver can not be avoided to benefit from broadcasting service. So, if nobody is forced to pay money for the program they view, there will be no encouragement to create content. Therefore, television is directly subsidized by states or advertising. Another obstacle for 'free market' in broadcasting field is seen as the natural limits to channel (broadcaster) number stemming from spectrum scarcity. Secondly, traditional broadcasting may fail to reach social targets such as improvement of citizens in a democratic society, social cohesion, universal and equal access to the information etc. unless it is regulated. According to this, content of broadcasting may have negative social results. For example, a television program that supports prejudices about the religious superstitions in a society does sure have negative effects. Programs that can affect the children's psychology are among these kinds of content that must be regulated. Therefore, television (broadcasting) is regarded as being very different economic activity in comparison to other sectors and thus subject to 'market failure'.

(consumer) is always inclined to view entertainment programs when he/she is to make a choice between an educative program and an entertainment program like "Be my bride?" which may create undesirable effects (Geray, 2005). And that means consumer/viewer can not maximize his/her 'utility'. Digitalisation of television infrastructures will sure not change this inclination of viewers.

Moreover, some problems before 'the free market' in television broadcasting will also continue to exist. For example, the barriers before the market entry[9] for newcomers of the television market will not decrease. Although there has been a great breakthrough especially in semi-conductor industry that made the production of content production tools very cheaper, important obstacles for entering the broadcasting field has still been huge. Obstacles stemming from market conditions are two-folded: First of all, broadcasting as a culture industry, and particularly television broadcasting, is the field of economies of scale which means the increase in efficiency of production as the number of goods being produced increases. And that digitalization of television reduced the content production and transmission could not alter the order in which bigger companies have been more successful. Thus, there emerge *dominant firms* especially in digital pay television sector in which scale economies gives the dominant firm a cost advantage over smaller firms.[10]

A second important barrier related to the market entry that digitalization could not be abolished is the fact that first financial cost to capture a key position in the market is still very high. Especially the competition for popular television content such as movie rights and sport events has been intensified. Likewise, the launching of a television channel requires high promotion costs including a series of advertising organizations ranging from contracting with television celebrity to public campaigns. For example, digital pay

[9] Technological breakthroughs, in some respects, appear to have encouraged diversity in media environment. Thanks to the reducing operation costs, it is argued that entry barriers have been coming down and the number of broadcast channels multiplied. Besides, emerging new media environments such as Internet provide even small-scale investors with the chance of being competitor to media moguls. Nevertheless, it is also a fact that the adoption of new communication technologies since 1980s has supported the process of ever-increasing concentration of ownership amongst leading companies in media and communication industries. (Doyle, 2002)

[10] Scale and scope of economies which means the average total cost of production decreases as a result of increasing the number of different goods produced proved to have played an important role in rapid concentration in digital pay television market. As examined in this chapter one after an immediate proliferation of digital pay television platforms beginning from mid 1990s was followed by fast mergers within the sector.

television platforms such as BskyB (Sky Digital), Canal Plus and DigiTurk, all have used same promotion against their rivals: To provide their customers with set-top-boxes[11] out of charge. Such a strategy of course make the smaller one disadvantaged.

2.2 Administrative Concerns and Problems

The state always plays a significant role in shaping the media system in any country. The most important form of state intervention occurs in the framing of broadcasting. Until quite recently, state owned public service broadcasting has been the only or the primary form of broadcasting. Despite the strong shift towards commercial broadcasting after the 1980s public service broadcasting still remains quite significant in many countries. Similarly, until recent years, the state ran the telecommunication infrastructures in most countries. In all societies today, the sate still has an important stake in the media systems and its shaping has been and is still an important public policy matter subject to heat debates. Consequently, at the time of switch to digital television[12] some common new and important concerns emerged for every government to tackle as a public policy matter. These can be resumed as follows:

- States own radio spectrum employed for FTA (free-to-air) televisions in virtually every country. DTT (Digital Terrestrial Television Technology) also use this 'publicly-owned spectrum'. Therefore, how the spectrum to television channels will be allocated and regulated will resurface as an important public policy issue during the transition process to digital television.
- Concerns as to the information economy are also important in the process. Information economy is based on converged communication environments. During 1990s, telecommunication technology and satellite transmission technology have rapidly digitised and converged with computer technology. This brought about a more integrated communication sector and a possibility of creating new markets in the overall economy. Convergence between computer and telecommunication sectors has created new commercial

[11] The set-top-boxes needed by existing analog television equipments to receive digital transmission are actually out-dated computer 'processors'. These set-top-boxes using special software decipher digital codes and turn them into transmissions that analog receivers can read. Besides, the modulators existing within the computers that enable us to connect internet via city networks are also available in these boxes.

[12] Digital television broadcasting is mainly realized on three platforms: Satellite, Cable, and Terrestrial Transmitters. Of them, digitization in satellite platforms seems to have already been completed. However, change in infrastructures of cable and terrestrial televisions has been slower in almost everywhere.

possibilities. Likewise, it was observed that digitisation of satellite television platform has brought about new commercial possibilities for broadcasters and offered a possibility of creating new markets in the television sector. Yet, terrestrial television market stayed in a marginalized position during this process. For this reason, digitisation of terrestrial television infrastructure implied the end of this position of terrestrial television market and integration of terrestrial television market with other communication sectors.

- One of the main reasons of government intervention to broadcasting systems obviously derives from socio-political motives. First of all, terrestrial television traditionally is considered as a public broadcasting service with some common principles, such as universal and equal access to broadcasts. In this context, free access to FTA television is widely assumed as an acquired democratic right to be protected and preserved in digital era (Adda and Ottovani, 2004).

Moreover, most governments regard the digital television as new a 'revenue' source and since digital television will bring about a more efficient way of using spectrum, some frequencies will be freed when the switch ends. Therefore, governments seek a fast and stable switch-over process in order to decide what to do with new empty frequencies. Among the possible choices, selling freed frequencies to growing wireless communication sector (particularly 3G phones corporations) via auctions seems to be the first preference in this process. Another strong alternative is to keep these freed frequencies and allocate them later to improve 'interactive' services on terrestrial communication. Selling frequencies to broadcasters licensed in digital television again via auctions is obviously is another option. However, it can be argued that the decision makers are reluctant to choose this option due to the fact that politicians have always had close relations with the commercial broadcasters.

However, there again emerges certain policy problems that the regulators have to face concerning the transition process: First of all, the question of how to meet the cost of digitization of traditional analog broadcast infrastructure becomes a matter of controversy: The main problem is that viewers can have access to digital content only if they purchase costly new digital equipment. However, viewers are not likely to be easily convinced to buy such extra equipments unless they find satisfaction and real incentives in what they are to receive in turn. Similarly, broadcasters are also reluctant to invest for the betterment of their

products if there are not enough households possessions of digital television set.[13] Likewise, broadcasters do not seem eager to carry the 'burden' of infrastructure costs necessary for the renovation of transmitter equipments. Naturally, in the process of switching to digital television terrestrial transmitters must be converted into digital. Besides, a trial process for new transmitting technological infrastructure is needed. In this process, broadcasters demand public broadcasters to open up their assets and technical infrastructure to facilitate the transition. Moreover, broadcasters require governments to mobilize public broadcasters to facilitate the transition in terms of encouraging public for transition to digital television.

A second aspect of the problem appears in allocating the digital frequencies which is traditionally regarded as 'natural resource' belonging to people. The governments have to lay down a calendar and strategy as to regulating the switch to this new technological infrastructure and allocating digital frequencies. Moreover, governments have to convince broadcasters to follow the rules as to switch calendar and strategy. In this context, digital frequency allocation emerges as one of hardest points of controversy between governments and private terrestrial broadcasters. Governments want to allocate digital frequecies at once. Because, growing wireless sector creats an additional pressure over the magnetic spectrum, especially the spectrum below 1 Ghz a broad part of which is mostly used for television channels. Nevertheless, broadcasters have their own fears about government plans for digital television. Above all, they want to keep their positions intact in the television market. In other words, they do not want to risk their existing positions in the market during the process of technological transformation. In this respect, they do not want new rival broadcasters to be licensed. Moreover, if digital frequencies are to be allocated to develop interactive services on terrestrial television, it seems so that they want governments to allow commercial broadcasters to create pay-based television content or launch pay television channels on terrestrial platform.

In such a context, reconstructing the broadcasting environment on a digital basis without hampering the principles of public service is the exacting task with its contradictory elements. On the one hand, governments endeavour to mobilize private broadcasting organisations to accelerate and achieve the transition to digital television. On the other hand,

[13] This can be, therefore, called as 'chiken-egg problem'. Indeed such a dilemma in television history is not new. During the transition process to 'color television' similar problems were also experienced. However, this time the issue has been exacerbated because of increasing competition with the rise of new outlets against terrestrial FTA television such as cable and especially satellite televisions.

broadcasters want to protect their dominant positions in the terrestrial television market and moreover, demand the relaxation of the use of digital frequencies to introduce pay terrestrial television channels or seek for the possibilities of developing pay-based interactive television services for their terrestrial televisions. However, this would not conform to the established principles of public service since it practically and virtually denies the free and universal access.

Whether the government will grant license to terrestrial digital television is the principle which is also of crucial importance for the survival of terrestrial television. As a mater of fact, a wide range of policy decisions is available to the decision makers for the conversion to digital television. This implies as real struggle for influence among the stake holders such as government officials, members of regulatory bodies, representatives of the dominant broadcasting companies and even the producers of equipment. The strife for influence will also involve representatives of the whole telecommunication industry. Arguable policy options regarding allocation of digital terrestrial television frequencies are as follows:

- Governments can license new advertiser-supported broadcasters: Digital television increases the channel capacity in given amount of bandwidth. Governments can use this extra channel capacity by licensing new advertiser-supported channels. In this case, the competition between advertiser-supported channels for sharing the advertising pie grows up. It is one of the biggest fears of dominant broadcasters in terrestrial television market.(Brown, 2003: 51)
- Governments can give extra channel capacity to existing broadcasters in order to launch new advertiser-supported channels: Broadcasters can create new mass audience channels or thematic channels in addition to their existing channels. Programming diversity thus can be increased, while the ownership of programmes is unchanged. In this case, there would be no increased competition. Total advertising revenue would probably be shared among existing broadcasters. (Brown, 2003: 51)
- Governments can license broadcasters to launch pay television channels on terrestrial television in addition to advertiser-supported television: Governments can give this right to new broadcasters or existing advertiser-supported broadcasters which are already existing on terrestrial television market. In this case, with the introduction of pay terrestrial channels, the competition within pay television market dominated by the channels on cable, satellite platforms will probably become more fierce. However, new pay television channels put a

minumum pressure on advertising revenues shared by existing terrestrial channels. Pay television on terrestrial may be a new revenue source for existing terrestrial broadcasters.

- Governments can license new public (service) channels and new community channels to improve public service in terrestrial television market: It may be decided to allocate new digital frequencies only to public service channels or non-profit channels to broadcast for minorities in any society and so on.

Or,

- Only existing broadcasters can be licensed and extra channel capacity is reserved for other options. In this case, governments can decide to give permission for only existing terrestrial broadcasters (both commercial and public service broadcasters) to maintain their broadcasts in digital era and keep extra channel capacity for new wireless applications such as 3G (e.g. Third Generation Mobile Phones).

Moreover, governments can use extra channel capacity to develop new interactive services on terrestrial television. New channels capacity can be allocate to create 'feedback' channels through which users/viewers can transmit signals. Thus, a user of terrestrial television can communicate with the broadcaster via remote control of the television set or can choose any program offered and so on. This kind of interactivity is much more available on cable and satellite platforms where bandwidth capacity is broader than terrestrial platform. However, taking into account the developing technology, this possibility is regarded as an option for future regulations. In this respect,

- Governments can allow commercial broadcasters to create new fee-based services like 'pay-per-view' programs and interactive services: In this case, revenue sources of commercial broadcasters would diversify.
- Governments can only allow public service broadcasters to improve interactive services to enhance distance education, health services etc.: In this case, new improved teletext services can be developed using extra channel capacity. Via these teletext channels users can reach, education or health information on interactive basis.

Transition to digital television thus gives governments an important chance to make radical alterations as to the competition in terrestrial broadcasting by determining the channel number and the services to be available on digital terrestrial platform.

As for cable and satellite television, for at least two reasons the concerns of the governments mentioned above as to the digitisation terrestrial television does not necessarily exist for cable and satellite platforms. First, these platforms do not use magnetic spectrum, and secondly since their inception neither cable television nor satellite television has not been subject to strict public service rules that have regulated terrestrial television. Nevertheless, the decisions and indecisions of governments play the key role in determining the concentration and competition in cable and satellite television markets. For example, governments can decide the technological standards to be used for new digital equipment that control the access of viewers to the channels. If governments force compatible set-top-boxes adopted in the sector, any dominant cable or satellite television company can control the access to channels in that platform easily. In other case, every platform puts its proprietary system to the use of its viewers and thus tries to control the access to both channels and interactive services.

2.3 The Brief Historical Account of The Development of Digital Television

2.3.a International Competition Over Consumer Electronics Market

Digital television is a result of advanced television researches conducted in Japan, USA and EU in last decades. Advanced television researches have much to do with the international competition for consumer electronics market between these triads. Digital television is a new technology developed and first adopted by USA and EU against Japan's analog HDTV standard. Likewise, different digital television standards were developed by these rivals (Please see figures 1-2-3 at Appendix).

Beginning from early 1970s, American and European leadership in world economy and particularly in consumer electronics market was increasingly challenged by Japan and some other Asian countries, so-called 'asian tigers'. European share in international consumer electronics exports declined, in a decade of 1970-1980, from 46% to 37%, and American share dropped to nearly 20% from 30% in 1970s, while Japan and other Asian tigers increased their share from 8% percent at the beginning of 1970 to nearly 25% in late 1980s. The decline in consumer electronics and high-tech sector was at the same time raising the concerns about trade deficits of US and Europe. The trade deficit in exploiting and importing video and audio equipments like TV receivers, video cameras, CD players etc. was on its own constituting the 20% of American total deficits. Many once-dominant firms

of American and Europe capital in audio-visual sector had to leave their places for Japan and other Asian manufacturers (Galperin, 2004: 28-33).

On these conditions, newly offered HDTV (High Definition Television System) system as a new world standard by Japan was, albeit not immediately, perceived as a new threat in American and European contexts. The issue of transition to digital television originated from this intensified competition for the leadership of international consumer electronics market which was based on technological standards. The issue is initially centered on superior picture and sound quality systems.

Analog HDTV (High Definition Analog Television) was widely accepted as the new generation of analog television to spur then consumer electronics market. For US and Europe, the problem was that a HDTV standard was first developed and offered by NHK (Japan Public Broadcaster) –led Japan consortium. Instead of refusing such a system evidently superior to traditional analog standards, developing local HDTV standards was attached a strategic importance. Main purpose was to create a competitive new television standard and thus to protect domestic market[14]. Add to this, adopting HDTV television was thought to be beneficial for the performance of domestic consumer electronics sector, related sectors like semi conductors sectors; and thus HDTV was thought to have positive impact on overall economy.

HDTV (Analog High Definition Television) began in 1970. NHK (Japan Public Broadcaster) launched the modern development of High Definition Television, and carried

[14] From this perspective, HDTV agenda was looking like switch to color television. Indeed the HDTV agenda and transition to color television was similar in many respects: Consumer electronic industry, especially receiver and related equipment producers were at the front of proponents in both cases, screen standards were at the core of debates of the process, what was at stake were protecting national producers against other national producers (rather than global ones), and regearing production consumer electronics and related sectors. For example, as regards to color television, in countries decisions relating to the color system were bound up almost from the start with decisions relating to the line standards in television. The main purpose was differentiating the standards. Renewing infrastructure both at the production and at the reception end was the only big concern. High costs of color film stocks and film processing, inadequacy of studio spaces, prices of color television cameras, make-up and costumes were initially problems that the broadcasters would face up in the transition process, like HDTV process. In return, broadcasters could not find any interest in transition to color television and analog HDTV television in their name. Moreover, they were assigned in both cases a special 'duty' which had existed for broadcasters since the inception of broadcasting: "to help the trade to sell the new equipment (in these cases, color television and HDTV television). For a comparative history of broadcasting technology with UK and other countries please see 'The history broadcasting in the UK' volume V, Asa Briggs, Oxford, 1995, New York.

out extensive research for choosing a scanning format, an aspect ratio, and an entirely new electronic imaging system. From 1970 through 1977 technical research papers were published around the evaluation of picture quality, the response of the human visual system to increased line scanning, and etc.. And in 1973, the original wide screen 1125 line was announced as new HDTV system. In 1974 the International Telecommunications Union, through its CCIR (Consultative Committee on International Radio), adopted an HDTV Study Question stating (Flaherty, 2005):

> Considering that high definition television systems will require a resolution which is approximately equivalent to that of 35mm film and corresponds to at least twice the horizontal and twice the vertical resolution of present television systems: The CCIR UNANIMOUSLY DECIDES that this question should be studied: What standards should be recommended for high definition television systems intended for broadcasting to the general public?

Thus, it can be said that advanced television researches till the digital television was chiefly related to the improvement of television sound and picture quality. What was at stake as in switching to HDTV television was the race between the triad (Japan, USA and Europe) on the consumer electronics market. Therefore, technological standards to be adopted within and between countries were subject to harsh bargaining.

By 1977, the SMPTE (Society of Motion Picture and Television Engineers) Study Group on High Definition Television was formed and CBS and NHK presented the first HDTV demonstration in America at the SMPTE Winter Television Conference in San Francisco in 1981. Two weeks later an HDTV demonstration was presented in Washington, for the FCC and other government entities.

In 1987 the FCC sought private sector advice and formed the ACATS (Advisory Committee on Advanced Television Service), and charged it to study the problems of the terrestrial broadcasting of advanced television, to test proposed systems, and to make a recommendation to the FCC for selecting a single terrestrial HDTV transmission standard for America by 1993.

The main problem was analog HDTV was requiring a broad spectrum interval approximately twice of the spectrum standard definition analog television (traditional television) needs. According to the existing spectrum plan of US, one analog television channels was using 6 Mhz, whereas analog HDTV was requiring 12 Mhz. In a period,

spectrum below 1 Ghz was getting more profitable, this kind of transition had many opponents.

As a result, on June 1 1990, General Instrument proposed an *all digital terrestrial* HDTV system, and the digital era had begun. Although the FCC had said several months ago in 1990 that it would determine if all-digital technology was proper and feasible for a terrestrial HDTV transmission standard, most observers viewed that technology can only be realized in the future. Later the same year, General Instrument became, however, the first proponent to announce an all-digital system. Later, all-digital systems were announced by MIT, the Philips-Thomson-Sarnoff consortium, and Zenith-AT&T.

The problem of FCC with digital standard was initially the questions arose about digital standard's interoperability and compatibility with other media. What was mainly considered was the compatibility with satellite and cable, however with the advent of digital systems it was understood that convergence of traditional media with computer and telecommunication was a bigger stake.

Thereupon, FCC, in the Spring of 1995, required the advisory committee to include several Standard Definition or SDTV (Standard Definition Digital Television) formats in the digital television standard, and without further SDTV tests, the SDTV formats were added to the ATSC (Advanced Television Systems Committee) scanning formats and the planned transition to HDTV in America became a transition to SDTV and HDTV. Turning to SDTV was to prefer effective spectrum use with new interactive services account for more effective converging with computer and telecommunication to high picture and sound quality. In following terms, digital HDTV that uses same bandwidth traditional analog television use would be a part of this process because of its advantage in sound and picture quality that could attract customers. But, initially studies were centered on transition to SDTV (Standard Definition Digital Television).

2.3.b Information Society Agenda

'Information society' has oftenly used in public reports and various researches as well as academic studies, as a concept that has no meaning taken for granted. The concept of information society actually has become a cover-up for the justification of certain political actions and inactions. The proponents of the information society propose some measures to be taken to reach information society ideal. It is argued by the proponents that employment

of advanced information technology in the context of privatization will reduce the inequalities in access to information and provide the proper competition within the economy. In doing so, it is told that a rapid infrastructure change is needed and the 'burden' of this transformation has to be taken on by the state. According to this, state has to meet the cost of infrastructure transition and meanwhile has to privatize the public assets or allocate these assets to private enterprise without no charge in return of protecting public interest.

"In this context, the role of the state has been redefined as the regulator of cultural industries instead of the State, organiser of the broadcasting" (Kaya, 1994: 400). This process supports the new form of capital accumulation. However, when it comes to promote public service broadcasting, states and proponents of public service are forced to find further justifications for funding public service broadcasting corporations. Instead, proponents of the process argue that the character of public service broadcasting should be determined within market conditions.

The concept of information society has to be dealt with at this point. Because, just as in the early 1980s an advanced television systems agenda emerged, so in the early 1990s, as second basis for digital television prospects, 'information society projects' appeared. NII (National Information Infrastructure) Project in USA and Information Society Project in EU were boosted by the political authorities just when the digital television project appeared as a concrete political agenda.

It has been claimed that, beginning with Fritz Machlup in 1962, the share of 'information' based sectors in the economy have had central importance for a long time at least for industrialized countries. According to this approach, information and communication has come to a central point in the production. All sectors in the economy have been either directly or indirectly depended on information and communication. Besides, information itself has become an intangible commodity. On the basis of such a conceptualization of new economic framework, a group of social scientist, futurists, economist etc. began to make new conceptualizations claiming that a new society had emerged. For example Daniel Bell coined "post industrial society", McLuhan "Global Village" or "Information Age", Alvin Toffler "Third Wave" and etc.. And most of the scholars who were proponent of this

approach[15] used the term of "global information society" and extended this view towards underdeveloped countries (Geray, 1994: 74-75).

However, in the first part of 1990s, 'the concept of information society' became included in certain political agendas in US and EU, respectively. This was the political framework in which transition to digital television is justified and through the process besides the traditional administrative concerns as to the television, 'information society' project takes places as a rhetorical basis.

In the first term of Clinton administration inaugurated in 1992 gave a special importance to NII (National Information Infrastructure) Plans. The Information Infrastructure Task Force (IITF) was founded. This group included some federal agencies such as ARPA (Advanced Research Projects Agency) which had had important roles in developing defense technologies such as intranet (internet), under name of DARPA. In September 1993, governments NII plan was officially launched. From the beginning digital television project was given a key role in the overall transformation of communication infrastructure. Digital television as a ubiquity consumer electronic product would play a key role in improvement of distance learning, health care and e-government and other advanced information services. Even so, *the economic and industrial concerns were more clear and concrete*. In a report prepared by IITF, it is stated that traditional broadcasting could become an isolated industry unless interoperability and interactivity with other applications and media would be provided. It was also asserted that this prospect was a serious concern for the economy. As

[15] All these approaches as a basis were technological determinist. The emphasis on the spectacular and transformative technological innovation was the most common definition of the information society theories. According to these theories thanks to the development of information and communication technologies economic growth would be sustainable and thus information society would be realized. This was indeed a proponent for a certain model of social progress: A technology oriented progress. This view sees information technology as the beginning of a new epoch in social progress thus attributes positive features to new technologies. According to Webster, those who endorse the idea of an information society and those who regard informatization as the continuation of pre-established relations may be separated as proponents of 'post-industrialism, postmodernism or flexible specialization' and proponents of neo-Marxism, flexible accumulation and the public sphere. The latter group does not deny the importance of the information to the modern world, but unlike the former group, they argue that the form and function of information is subordinate to long-established principles and practices. Likewise, former and latter groups are differed in respect to technological conceptualization. Information society theorists advocate that technologies are first invented and then subsequently have an impact on society, thereby impelling people to respond by adjusting to the new. This approach is objected by the proponents of second approach as such that attributing a privilege to technology over society refers to an assumption of separating social, economic and political dimensions of technological innovation. Yet, technology is not aloof from the social realm, even it is directly a part of social development, as a consequence and a factor. For further information, please see Webster, 2003.

for Europe, with the Bengemann Report of 1994, EU has officially launched its 'Information Society Action Plan'. Bengemann report pointed out the weak and fragmented communication market in European context as stressed at several times by several reports. According to report, extension of liberalisation measures adopted in telecommunications to the broadcasting sector was the remedy. Because of the fact that broadcasting sector would be among major sectors in the economy of 21st century, digitalization of infrastructure should have been subject to close attention. Naturally, in this process digital television was a core component to be catalyst to provide sector convergence (Galperin, 2004: 37-42). Although, the European Commission which was attributed great importance by Bengemann Report to provide consensus between national regulations towards more liberalisation, did not directly deal with the issue of digital television, it only drew the framework.

The process was evidently 'market-oriented', indeed. In realizing 'information society' as was put by governments in the first part of 1990s within political agendas, was seen primarily government-led. However, that does not mean that the process was against deregulation and privatization and liberalisation process. By the contrary, the primary purpose was mentioned as the convergence of broadcasting networks with other networks in a way that create a synergy in overall economy towards a more competitive market. Anyway, affiliation to 'market determinism' was another aspect of information society policies adopted in Europe, as well as US. For Goodwin and Spittle, 'the market determinism' is another discourse of which runs throughout the debate of information society as well as 'technological determinism' in which technology is presented as the source of profound and far-reaching change within society and as the prime generator of the digital or information society. In 'market determinism', similar to technology conceptualization, market is nominalised, given social agency and presented as an external force outside the society. Thus this discourse interacts with a technological deterministic discourse to construct a set of sociological relations whereby all governments comply with the conditions determined by market and technology. This was evident in US's NII strategy as well as Bengemann Report in EU (Goodwin and Spittle, 2002: 14):

> The Group is convinced that technological progress and the evolution of the market mean that Europe must make a break from policies based on principles which belong to a time before the advent of the information revolution. . . . This [audiovisual] sector is in rapid evolution. The market will drive, it will decide winners and losers. Given the power and pervasiveness of technology, this market is global. (Bangemann, 1994)

A direct result of these initiatives was telecommunication and broadcasting acts launched one after another in US and Europe. Of them US's Telecommunication Act of 1996 is a proper exemplification of the approach: Rather than the term 'user', the term 'consumer' is preferred in the text of act. Goodwin and Splitter also points out that in Europe in the information society policies, a paradoxical definition of user as consumer/citizenship emerged. In Bengemann report, there is a citizenship identified only with the needs of consumer. It is argued by Bengemann report, once products can be easily accessible to consumers, there will be more opportunities for expression of multiplicity of cultures and languages etc.. According to the report "citizens and users" can easily reach the products only if competition and multiple competing services will exist in information and communications sector (Goodwin and Splitter, 2002).

The concept of information society constitutes a political basis for convergence. New services and activities are provided in this context. The impact of convergence has been experienced in overall economy as well as in related sectors. The birth of e-trade can be regarded as the best exemplification of this process. E-trade is a new concept expected to be a cheaper way of trading between and beyond the borders and existing limits. It includes both electronic order of real goods and on-line order of services.

In relation to information society policy, a 'neo-liberal consensus' is thus produced. Governmental action becomes largely restricted to the role of facilitator in the creating of a free and competitive marketplace by constructing both the market and technology in deterministic manner.

As a result, as Goodwin and Splitter puts in paraller to US's NII (National Information Infrastructure) Policy, in Europe's Information Society Project, despite the articulation of a broad set of policy goals including enhancing the citizenship, at the expense of social and cultural factors, economic parameteres are priveleged (Goodwin and Splitter, 2002).

2.3.c The Rise of (Pay) Satellite Television

It is fact that digitalisation of television facilitates subscriber-supported television (pay-TV) by the encryption of television signals. There is far more scope with digital than analogue for on-screen display of programming information (electronic programme guide), and for

"interactivity" between viewers and broadcasters thus allowing the provision of a range of 'interactive' services.

In US and Europe, as well as in Turkey, the first outcome of this digitization process television broadcast systems is the rise of satellite television platforms within the media industries. The number of satellite pay television households has recorded a rapid increase in the television market before the cable and terrestrial television households. Particularly pay television platforms on satellite became the pioneers of digitalisation of television and have created a pressure on the transition to digital terrestrial television process which is dealt with in chapters below within national contexts[16].

Satellite transmissions used for television had reached an economic breakthrough in the 1970s. Satellite transmission was not initially a competitior to cable and terrestrial transmission because satellite systems had been required big satellite dishes. Therefore, till the small satellite dishes would be enough and cheap systems produced, satellites continued serving cable operators by carrying content for them. After small dishes became adequate for a broad variety of satellite content, DBS(Direct Broadcast Satellite)/DTH(Direct To Home) systems have become a real alternative for cable and terrestrial transmission.

However, the main take-up of satellite transmission would be realized after the advent of first digital satellite pay television platforms in mid 1990s. Worlds biggest media giants like News Corporation and Vivendi Universal made huge investments to the digital platform operators. These platforms rapidly tookover the rights on premium content like movies and popular sport events. Besides, these platforms rapidly differentiated themselves by ultimately benefitting from the digital transmission's opportunities. 'New revenue generating applications' began to be developed and used by these platforms and they became the pioneer operators of digital television era.

[16] Historically, advertising supported television sector has dominated the television medium both financially and in terms of audience share in many countries, including the United States, England, France, Italy and Turkey as well. During the 1990s there was a substantial increase in the number of terrestrial analogue advertiser-supported channels in the European Union countries where they quickly acquired sizeable audience shares and profitability. However, in recent years the dominant position of the large commercial advertiser supported networks has been eroded, mainly by cable and satellite pay television. In the United States, for example, the aggregate audience share of the 'big four' networks of ABC, CBS, NBC and Fox during the prime-time evening hours has declined from around 70% in the late 1980s to around 54% in 2000. A major reason for this dramatic shift is that various pay television networks now specialise in a number of programme types that were previously the preserve of the free-to-air networks, especially movies, sport and news. (Brown, 2003)

Digital satellite pay television history began with DirecTV satellite pay television platform in US in 1994. In a few years many operators launched their digital satellite transmissions. DirecTV, USSB, Primestar, EchoStar, and the DISH network were among them. However, by 2000 only DirecTV and EchoStar survived in the market, by either merging or by swallowing their competitors. And moreover digital satellite television subscription equipments became the fastest selling consumer product ever to enter the US market. By 2006 satellite pay television operators managed to get nearly 25% of the television market (Katz, 2005: 136-7).

In Europe, digital television broadcasting launched in Franse in 1996 with Canal Plus (Vivendi Universal). It was followed by the establishment of Sky Digital (Digital version of Murdoch's BskyB in England), Bertelsmann's Premiere in Germany and Vivendi's Telepiu, and Murdoch's Stream in Italy in 1998 and 1999. By June 1999 in European context, satellite pay television platforms managed to reach 80% percent of television households *potentially*. In two years between 1997-1999 the number of subscription to pay television packages rose to 10 million from 2 million.

Today, there are three major satellite television service providers in Europe. The French Canal+ is the biggest pay television operator in Europe. Its investments in 10 countries have played a key role in Europe's leadership in digital satellite television penetration in the world. News Corporation's BskyB (British Sky Broadcasting) is the second largest operator. It has got huge investments in digital television market, not only in Britain with Sky Digital but also with Sky Italia (birth after Stream and Telepiu merged in 2005) and DirecTV in America which it has recently bought in 2005. And Premier in German is the third largest provider of digital satellite.

Digital satellite pay television platforms continue to grow in many areas of the world, and are expected to enjoy higher profitability over the next several years, according to many forecasts. However, growth is slowing due to the fact that beginning from 21st century digital cable and digital terrestrial television began to challenge its fast growing. It is expected that 40 million DTH (Direct-to-home) pay television subscribers will be added through 2008. When compared with the 61 million active subscribers of DTH pay television subscribers at the end of 2003 it proves to be a fast grow. In additon to this increasing subscriber base, the industry's profits will be on the rise particularly because of reducing

equipment costs, new bundling methods and revenue generating interactive applications (www.instat.com/r/nrep/2004/). Digital satellite television platforms outnumber the digital cable subscribers worldwide and it is expected that the situation will not change in the next few years. It is estimated that by the end of 2007, there will be 90 million digital satellite pay television subcribers, although no increase is expected in the number of digital satellite pay television platforms which is now 45 in the world.

Actually, forecasts made about the future of digital television market have continuously pointed out this development of pay television in the digital era since the late 1990s. Various studies have showed that with the rapid expansion of pay television after digitalisation there would be a strongest growth in television revenues through direct viewer/consumer expenditures. It was also foreseen that the introduction of digital television would not create an expansion in 'free' television content and opportunities, but rather it would expand the market for subscribtion-based television services and with pay-per-view (and video-on-demand) and new interactive services (revenue generating applications or in other words value added services)[17]. Although, the each research found out different numbers and percentages, that the revenue obtained from subscription-based television services would take the lead in television market in overall revenues was the common result of researches. Papatpahanassopoulos exeplifies the forecasts of some companies and research centers: Baskerville Communications Corporation (1997) forecasted that as net

[17] And what made the digital pay television privileged was its difference from the analog pay television service. In the analog domain, pay television packages had traditionally been structured into two tiers: basic and premium. Access to the premium tier was only possible if the subscriber was already paying for the basic tier. Premium programming was including exclusive programs such as films and popular sport events which were much more expensive than the general entertainment channels. The problem of such a basic bundling was that the content of the basic tier was not attractive to consumers because they could find these content on free offerings of other platforms. In contrary to this common analog pay television bundling, what Forrester call "A la carte" model which then began to be available on modern analog cable systems was offering a more effective way of marketing the content. The idea inherent in 'A la carte' is that the viewer/consumer was free to choose any mix of basic and premium channels required, and is charged accordingly. This idea afterwards extend into pay-per-view and video-on-demand concept. On traditional analog pay television premium channels were the only scrambled content all together. In contrast, in new model every single channel could be scrambled one by one. Such a marketization was more effective but to that extend was more expensive. It was requiring more-sophisticated back-office software. At this point digital television offered a solution to this problem and a imperative for this, since as channel choice multiplies and the potential for ever more complex tiering arrangements increases (Forrester, 2000, pp.200-204). As a matter of fact it was a real breakthrough that eventually would turn the television as a viewed box by a viewer into a pipeline thereby a consumer could reach a variety of information services including individual programs rather than channels and other interactive services the consumers pay for again individually.

European television revenue would double to 62 billion dollar by 2006, main pay television operators like Canal Plus and BskyB will account for 24% of total revenus by doubling their 1997 share. Forecast of J.P. Morgan showed similar trends. According to its report (1998), an increase in demand from 6 billion dollar in 1998 (17 million households paying an average of 346$ per annum) to 26 billion dollar in 2005 (41 million households paying an average of 643$ per annum). This represented an increase in penetration from 12.3 per cent of households to 27.3 per cent.[18]

The reason behind these forecasts and such a rapid growth seems to be varied. However, for Papathanassopoulos, the answer is probably linked to television economics and technology exploitation. Analysts believed that there was a consumer surplus subscription-based television (cable and analogue pay televisions) had begun to exploit since the 1990s. In traditional television, according to these analysts, the cost paid by viewers was either license fee which was very low or an indirect cost as commercials that funded private televisions. Thus there seemed to exist a difference between the amount viewers pay for something and the amount it is worth to them. The fact of that cable had been a subscription based service and analog DTH satellite services' success led the analyst consider that consumers were ready to pay more both to get something that is not offered by traditional analog television. That was more choice and interactivity that would be possible with digital television (Papathossonopoulos, 2002: 95).

Researches and developments conducted by digital satellite platforms over interactive services[19] have been continued. Although the future of interactive services and interactive televisions seems bright, interactive applications in digital television is in its infancy especially in terms of commercial applications. The financial viability of interactive services proved to be important. While the majority of Sky Digital's revenue comes from subscription fees, interactive revenue rose 17 per cent in total revenue. Canal Satellite's

[18] For further analysis results see Papathanassopoulos, 2002: 91-92

[19] For example, *interactive advertising* allows viewers when clicked on the advertising programme to get more information about the programme. And by means of *interactive commerce* (t-commerce) you can order that product at the same time via your remote control. *Premium rate telephony* is another interactive service that can apply to home banking services, participating quiz programmes and televised text message programmes, voting as a political action and voting for a contest and etc.. In this case broadcasters enter into a revenue sharing arrangement with telephone companies in relation to calls generated from viewers. *Games and gambling* are among other interactive revenue generating services to be improved and diversified. (Brown, Allan, "The Digital Future of Terrestrial Advertiser-supported Television", Prometheus, Vol 21, no 1, 2003, Taylor&Francis, ebschost database)

(Canal Plus) situation represents a similar trend. Recently Canal Satellite has launched new interactive services like thematic portals enabling easy navigation between different services, a new shopping channel, new games including advanced tetris and 'Fox Kids Play" portal operating on the basis of Pay Per Play formula, interactive games family channel etc. According to its statistics 90% of subscribers use the interactive services at some time or other and its share in total revenue is growing (http://www.advanced-television.com/2003/News_archive/archivefront2003.html).

Besides the expansion of pay-per-view or on-demand packaging of traditional television content, increasing diversity in interactive services seem to have changed the economics of television radically. As Griffiths puts it, technological changes that took place in its first forty year including the advent of color television, had no potential of having impact over the fundamental television business environment. It seems so that in digital television era, the commodification and the marketization of television content has radically been changing. The vital difference in digital television business is related to the conceptualizing the new 'viewer'. According to Griffiths, the digital television is the television of the 'affluents' driven simultaneously by the new economy into both affluence and lack of time. They need new ways of working and living smarter, so they constantly seek them out. Digital television seems to offer more efficient use of the time. "They demand exactly what they want when they want it. Digital television is their natural medium and they are the first to adopt it." Griffiths resumes as following (Griffiths, 200 30):

> The platform owners control the direct paying relationship with the viewer. But there comes a point where the economics of digital transmission mean that platform owners – be they on satellite, cable, terrestrial or broadband – need to increase their revenues rather than increase their share and get into profit. They do this by targetting the affluent viewers.

Besides the "affluents", "the high consumers" who are prepared to spend a disproportionate amount of their wages on television, according to Griffith, are also important. But the costs of acquiring and retaining them is *high*. It is why BskyB after rebranded as Sky Digital gave away its set top boxes for free, as DigiTurk does in the process of competition with CineDigital and Star Digital. This had an effect of drawing in the high television consumers and forcing competitors to do the same[20].

[20] Providing free set top boxes, a rich traditional television content, premium contents like popular movies and popular sport events and lastly a broad range of advanced interactive services became the recipe of success in digital television era. Hence, under free market conditions and competition, a digital television landscape in which bigger capital could swallow the smaller one emerged. For

CHAPTER 3

SOME SELECTED CASES OF THE DEVELOPMENT OF DIGITAL TELEVISION IN DIFFERENT NATIONAL CONTEXTS

Media systems are one important part (sub-system) of the general social, political and economic systems of all modern countries. As such, they are historically shaped in line with the specific features of the general societal organization. But, this does not necessarily imply that some common traits can not be discerned for all media systems. Especially, the features of the technology they share and are based on, and the interactions between the countries offer the possibility of drawing parallels and similarities between the specific media systems.

In this respect, USA's experience of conversion to digital television may be (and is) full of instructions for other countries in two principal respects. Firstly, USA is one of the pioneering countries that generated and implemented the digital television. Secondly, with its dominant position in World's information technology markets, it has the potential to induce and influence other countries to adopt the digital television.

Britain's experience may also represent many thoughtful insights to a country like Turkey that has already formally decided to convert its television system to the "new" technology. As a matter of fact, Britain is the major country that still claims attachment to "principles of public service broadcasting with a prestigious public broadcasting corporation despite the market pressures of the commercial television. Also, as a member of the EU, Britain's solutions to the pending problems of the conversion process may serve as guidelines for all stakeholders in broadcasting, including the government.

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example, operators who could not give away free set top boxes, like Kirsh Media in Germany (Premiere) had never gotten a large enough customer basis and therefore failed commercially like Italian Telepiu's digital offerings. However, after Premiere was purchased by American Haim Saban and Telepiu and Stream in Italy were purchased and rebranded as Sky Italy by News Corporation, signs about the future of the former money-losing enterprises changed to very positive. New owners have made substantial investments to the platforms and advanced the interactive services as well as traditional television content. For example, in four months after Sky Italia launched 200.000 new subscriptions has been reported. Sky Italia now the only pay television operator in Italy and Italy is expected to be fastest growing market for digital pay television in Europe in following years. (http://www.advanced-television.com/2003/News_archive/sep8-15.html)

These are the major considerations why a special space below will be given in this study to USA and British experiences of conversion to digital television.

3.1 Conversion to Digital Television in the USA

Throughout its history, broadcasting has been subject to change and continuously adopted itself to social, technological and political (regulatory) developments. The radio broadcasting from the very beginning required, by the 1927 Radio Act, to get license from the FCC and thereby adhere to certain policies. The television broadcasting in its turn, grew rapidly in the United States during the Post-World War II years of the late 1940s. The practices of networking, programming established and refined by the radio institution were rapidly and easily adapted to the new medium. By the mid-1950s, television had become the primary source of information and entertainment in most households.

USA, today, is one of the largest television broadcasting markets reaching about 100 million households. It is, like the Radio, also under the jurisdiction of the FCC, a federal governmental authority, which has the power to renew the license necessary to operate a television station. The licensed television stations, just like the radio stations are obliged to adhere to certain policies fixed by the FCC.

FCC regulations also limit the number of stations a group or individual operator many own by an audience "reach cap".[21] Today, television broadcasting as an industry includes five major networks (ABC, CBS, NBC, PBS, Fox) and three smaller networks (UPW, WR, IAX) that operate in an oligopoly structure in conjunction with their owned and operated stations and individual networks affiliates amounting up to about 1800 terrestrial stations. Many of these networks are in their turn parts of large media conglomerates. However, consumer demand for terrestrial television stations has considerably declined in the recent decade due to competition from cable and satellite television services.

Cable (also called CATV or community antenna television) television emerged in the USA in the late 1940s as a retransmission service of existing broadcast signals to households in rural areas that could not receive proper terrestrial television signals with conventional antennas. These early cable broadcasts were of poor quality and limited to a few broadcast channels. Cable did not develop at a considerable pace until the 1970s. In 1950, cable systems operated in only 70 communities in the United States. These systems served 14,000

[21] "The reach cap" limits a single owner to a maximum of a certain percent of the national audience.

homes. Following the elimination of a series of regulatory barriers imposed by the FCC and an increase in the number of new services available through satellite technology, it grew very rapidly. As a matter of fact, satellite technology created a considerable supply of new services in different forms to increase the customers' choices. To be more explicit, as new technologies, cable and satellite television began creating more channels and more services for the cable television operators to offer to their customers.

In 2001, the National Cable Television Association (NCTA) reported that about 87. 5 million households subscribed to some form of "multi-channel television" of which the cable was main provider, with its reach to 68. 2 million households while the direct broadcast satellite (DBS) totaled 14.8 million of the remaining subscribers.

One of the driving forces behind this expansion, without any doubt, is the conversion to a digital television system, since the cable television is upgrading itself to a digitally based delivery system. DBS (Direct Broadcast Satellite) providers already offer digital television.

As a matter of fact, prior to 1980s there was no significant satellite television penetration in USA. Early satellite set-ups which were very large (4m diameter antennas) and which were designed to serve for cable television operators were launched in early 1980s. However, the analog large dishes could never reach a significant number of individual television households till 1994 when the high-powered small dish DBS systems emerged. The launch of first DBS system, DirecTV pay satellite television operator which was owned by GM (General Motor) changed situation of satellite television sector in USA. With its rival operator, EchoStar, DirecTV which is now owned by News Corporation have experienced a rapid growing in the last decade and now reach 25% per cent of total television households in USA, by reducing the terrestrial and cable television share in total. Pay television operators in USA have already superseded the free-access platforms as shown by Table 1 below:

Table 1

Top Seven US Pay Television Operators

Operator	Number of ubscribers	Percent of US TV households
Table 1: Continued		
Cable		
Comcast Cable	21.5 million	19.6%

Communications	10.9 million	9.9%
Time Warner Cable	6.4 million	5.7%
Cox Communications,	6.2 million	5.5%
Charter	5.4 million	4.8%
Communications		
Adelphia		
Communications		
Direct Broadcast Satellite		
(DBS)	13.5 million	12.3%
DirecTV	11 million	10%
EchoStar (Dish Network)		
Total:	74.9 million	67.8%

Source: National Cable&Television Association, September 2004; Company Reports

Undoubtedly, the rise of digital pay satellite operators has had negative effect on the share of cable television operators. Yet, since cable operators were not forced to fit any timetable by governments, digitilization of cable television remained very low for a long time. By 1997, only ten thousands households in nearly 60 million had digital cable offerings. However, as from 1997 when the competition of satellite operators became more apparent cable operators such as AT&T BIS, Time Warner, Comcast and Cox Communications began to make digital investments and thus digital package subscribers. For all cable operators, pay-per-view offerings proved to be main driver for all digital television in terms of revenues generated. Althouh pay-per-view had already been available on analog cable offerings, digital one could provide more channels and new services. Nevertheless, this brought about *additional costs for viewers* like 6 $ per digital package and costs of the programs they wathced in pay-per-view offerings (Grimme, 2002: 236-238).

Thanks to its previous market share in the market, as the above mentioned report argues, digital cable managed to take the lead in digital television households in respect to the number of digital subscriber by 2003.[22] Even so, a substantial portion of the market

[22] Under the fierce competition conditions cable companies finds new ways of converting their analog subscribers into digital to get their digital services. For example, US second-ranked cable company Comcast was telling its customers that their monthly fee for Internet service would rise unless they signed up for cable TV as well. The company had sent letters to customers informing them that their monthly fee for Internet service would jump from E42.95 to E56.95 unless they took up cable television. Comcast said the new pricing structure was an incentive designed to get customers to sign

continues to be controlled by digital satellite operators. According to a research, DTH (Direct-to-Home) digital satellite services will continue to grow, but digital cable will maintain its lead. Digital satellite operators will have reached 27.1 million households by year-end 2007, while digital cable will have grown to 39 million households. According to the report, whereas satellite platform will differentiate itself by means of new services such as PVRs(Personal video recorders) and increasing channels choices, cable television will present bandwidth-intense services like VODs (video on demand) and additional interactive and telecommunication services (http://www.advanced-television.com/ 2003/News_archive/ april7_14.html).

These developments in the satellite and cable television sectors prove to be more fascinating when compared to their slow growing especially before the 1980s. In the course of events, one but a very important reason the cable television and DBS developed considerably slowly was the resistance and successful lobbying of the conventional (analog-terrestrial) broadcasters to limit competition in the markets. It is a fact that due to this lobbying, for years, the FCC restricted the growth of cable television by several regulatory barriers. As is known, eventually, those regulatory barriers were removed, allowing the cable television to grow. By the same token, today, conversion to digital television (DTV) is now required by the same FCC; thus an expensive burden over conventional broadcasters is placed which would reverse the situation. Consequently, this already well-advanced conversion and implementation of digital television in USA will undoubtedly be an influential driving force rich in its instructions for the other countries desirous to experience the same adventure.

Since the main resistance to this conversion comes from the conventional broadcasters who fear that their vested interest will be threatened through the challenge of digital television, it will be helpful to consider more closely of the conversion of terrestrial broadcasting to digital television.

3.1.a Transition to Terrestrial Digital Television in the USA

There has been continuous attempt in USA in order to improve the television services especially related to terrestrial television transmission. Among these attempts ATV

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up for both cable and Internet service: Comcast thus had 3.6 million Internet service subscribers at the end of 2002 and was adding almost 30,000 customers each week in 2003. “Comcast to force customers into cable TV?”,www.advanced-television.com/archieve/2003

(Advanced Television), UDTV (Ultra Definition TV), EDTV (Enhanced Definition TV), HDTV (High Definition TV) can be easily be recalled (Huff, 2001: 111). However, digital television (DTV) represents a 'breakthrough' in this process. Because, whereas the other standards were primarily developed to improve sound and image quality of television transmission, DTV represents a more comprehensive change in television technology.

In this context, HDTV (High Definition Analog Television) marks a turning point for the development of digital television in USA. Because, the debates concerning to HDTV which began in mid 1980s has much to do with the debates as to digital terrestrial television. Analog HDTV came to the agenda for the first time when a coalition of land mobile operators led by Motorola petitioned the FCC to relax restrictions on using UHF channels in 1985. Old broadcasting order had put UHF (Ultra High Frequency) channels in a disadvantaged position and therefore UHF band was mostly empty. But, terrestrial broadcasters opposed the proposal, claiming that these 'resources' had to be preserved for new television technologies like HDTV (High Definition Television). However, the debate remained freezed till Japan offered its own analog HDTV standard as the new global television standard in late 1980s.

In 1987, FCC formed "The Advisory Committee on Advanced Television Service (ACATS)" including broadcasters, cable operators, equipment manufacturers, and government officials. It was ACATS's task to study on HDTV standards and to facilitate reaching a market compromise on the issue. Although, the Japanese standard was initially supported in the committee, because of the rising fears about the race in consumer electronics sector the HDTV project turned into a national issue(Galperin, 2004: 70-74).

After Japanese proposal was blocked by both EU and USA at the International Radio Consultive Committee (CCIR) in 1989, AEA (The American Electronics Association) published an important report, that could take place in media on that time: According to this report, a possible failure of US to participation of HDTV might result in huge losts of its share in critical semiconductor market. However, two interrelated developments slowed the HDTV project down. There were much uncertainity about the standards and consumer adoption ability and difficulties in predicting how much and how fast HDTV would evolve. Therefore, neither government nor broadcasters was eager to make further investments into HDTV. Thus, eventually analog HDTV project faded.

A policy turn, thereupon was experienced in the beginnings of the 1990s during the Clinton rule. It was a turn into digital television policies from HDTV. The reason behind this policy turn is well explained by Reed Hundt (then FCC president): "Rather than bringing sharper picture to American public to bringing new information services" with an effort to deploy new communication structure under the agenda of NII (national information infrastructure) (Galperin, 2004: 84).

In the new term, the first problem was related to transmission standards. There was no intervention to the transmission standards for cable and satellite television transmission in the digital era. Anyway, the standards, DVB-C and DVB-S, which would be valid for sattellite transmissions were virtually global standards to be adopted by Europe as well. As for the standards of receiver equipments (especially set-top-boxes to be used to get digital signals) would therefore be subject to only cable and satellite operators' own decision[23]. However, the situation was more complicated in transition to terrestrial digital television. First of all, there was a international competition between the triad, Japan, USA and EU. Besides, wireless communication applications were increasing their importance in the economy and thus their pressure on the uses of magnetic spectrum. Because, terrestrial digital television transmission standards had to be comply with standards of mobile applications like 3G (Third generation mobile phones). Moreover, in American context the involvement of powerful computer industry into the display modes issue made the selecting standards a hard compromise.

At the beginning of Advanced Television System studies in 1980s FCC had acknowledged that setting a common transmission standard was a duty to serve 'public interest'. However, deciding whether FCC should *mandate standards or rely on market-driven process* was not certain. In fact, FCC was forced to choose both methods for selecting standards at different levels. In 1996 FCC decided to adopt for standardization only certain components of the

[23] In USA, governments and FCC has adopted a "market-oriented" approach to the digitalization of satellite and cable television in America. In this recpect, FCC has allowed the decision as to the CAS (Conditional Access Systems) to the operators themselves. It is therefore, the main driving force behind the development of digital television on cable and satellite has been the "*increasing commerical competition*". This competition is based on the strategy of differentiating the concept of the services in the digital era.

system: According to FCC's decision the video and audio quality standard would be MPEG-2 and Dolby AC-3[24] and data transport would be MPEG-2[25].

In 1993, thereupon, a "Grand Allience" was formed to determine new standards. It was an FCC-led coalitin including Zenith, Thomson, General Instrument, Philips, Bell Labs etc. and terrestrial broadcasters. In a short time, computer industry was involved in the alliance. Yet, for a long time, format to be used in display remained uncertain. After intense negotiations, FCC ratified the compromise on transmission standards at the end of 1996, but it again did not clarify what format to be used for display scanning, exactly. Because, with the entering of computer industry, a new discussion started between computer industry and broadcasters; display mode[26]. However, FCC's decision did offer two incompatible standards for the television receivers' scanning modes; interlacing and progressive[27]. That meant the FCC's decision did only offer 'transmission quality standards' over which there had been no significant debate in the industry. The decision was hard to take because of the fact that chosing any one of the standard was not only a decision of technology, rather what was at stake was the convergence between broadcasting and computer industry and how much computer and broadcasting industry would benefit from this coming convergence.

During the process, government and FCC adopted a market-driven approach and it expected the market representatives could reach a compromise. Nevertheless, neither ACATS nor the'Grand Allience' which were re-assignned for digital standards could reach a compromise. As a result, the battle between broadcasters and computer industry over digital television standards continued between nearly ten years and remained unsolved. At last, two rival groups in 1997 could reach a compromise on transmission standards with the common proposal of Grand Alliance and ACATS. That standard did comply with the previous standards proposed by the government. This new transmission standard was compatible with

[24] MPEG-2 (video compression standard which has become virtually a global standard) and Dolby AC-3 (audio compression standard) are standards that compress audio and video information-data on the television in order to maximize bandwidth.

[25] During data transport process data is compressed and coded by the transmitter. Incorporation of MPEG-2 as the data transport standard coincides with its status as an international standard for data transport and video compression.

[26] Progressive scanning method is used by computers, while interlaced mode is used by television.

[27] 'Progressive' mode was strongly supported by computer industry, because this mode was being used by computer monitors. Likewise, 'interlacing' mode was being offered by television broadcasters and set manufacturers.

analog NTSC receivers and called as ATSC (Advanced Television Systems Committee) standard. Yet, there was still no compromise on scanning modes. The only compromise was leaving this decision to the market competition. During this process, many offers as to creating "open receiver systems" were rejected by the groups. According to offers, a common scanning mode should have been produced for the digital receivers so that consumers would not meet imcompatible monitor standards when purchasing new equipments. However, FCC kept being reluctant to get involve in the scanning mode issue. This problem continued to be a problem for USA's digital terrestrial penetration in the next years.

As a result, public authorities adopted a very market-driven and therefore light regulation in terms of transmitter and receiver standards. In America, whereas the development standards for analog black and white and color television were very specific both for transmission and receivers, in digital television context, FCC and governments shifted towards a more market-driven approach. According to FCC, a 'market-driven' approach to receiver display scanning mode would select the 'best' standard. This is very significant because such an approach set the stage "for a massive competition between two very different industries and their quest to dominate the DTV era of electronics, meanwhile maintaining consumers' hostage to the process of competition" (Parades, 2000: 193).

Second problem was related to allocation of digital channels. In other words, spectrum management in the process of switching digital television was another point of contradiction. As a matter of fact, spectrum management in transition to digital television has played a key role because of the fact that for the first time, in regulating the terrestrial transmission government open the way for 'flexible use' in which terrestrial broadcast license owners can determine spectrum applications without spectrum oversight.

At the center of the debates was the argument of Clinton administration that under the new conditions of SDTV (Standard Definition Digital Television) why it would be needed to give an additional 6MHz channel to incumbents[28], while they had no real intent to make investment in transition. For this reason, it appeared as an obligation for government to

[28] The disscussions as to the spectrum management go back to analog HDTV term as well. Broadcasters were not regarding to switch to HDTV any benefit for them. Thereupon, governments proposed to allocate an additional 6Mhz channel to encourage to the broadcasters(HDTV channel loan plan). Because, in NTSC analog system an additional 6Mhz channels was required to realize high definition analog broadcast.

persuade the operators to accelerate the switch to digital terrestrial television. The main indicator of the new term was the Omnibus Budget Reconciliation Act of 1993 authorizing FCC, for the first time, to assign licenses by *competitive* bidding for the allocation of spectrum use. Although, the Act was not expilicitly about broadcasting, broadcasters feared that real commercial values of spectrum would be released. And first spectrum auction held in July 1994 for personal cellular systems (PCS) proved that cost got high. It was the biggest fear of broadcasters who used to use spectrum free of charge. From another point of view, Reconciliation Act and its successor 1996 Telecommunication Act which also included the rules concerning to spectrum allocation, were the authorizations of public authorities to reallot significant portion of spectrum from government/public use to private use. Reconciliation Act mandated FCC to realize spectrum auctions at once in comply, while Telecommunication Act represented reducing government/public control over the use of spectrum. As a matter of fact, together Acts were formed to promote the commercial development of communications and especially the emerging of digital television by reallocating digital channels in a market framework to spectrum management (Parades, 2000: 74).

However, the major argument of the national terrestrial broadcasters and proponents of this system in FCC and government was that the full auction for spectrum would be the end of the 'free television' and 'public interest'. In fact, it was 'public interest' itself which was controversial in the discussions about digital television. For example, opponents of terrestrial broadcasters including phone operators and pay television operators (cable and satellite) were claiming that "freeing spectrum" is the real interest of public (Snider, 2002). Besides, there are some government officers who dealt with the issue from another point of view. For example, former president of FCC, Reed Hundt are among the ones who argues that 'digital compression technology' was a breakthrough that had to change configuration of previous spectrum plans formed for HDTV and for analog television order. In order to encourage the HDTV, broadcasters had not been only granted an additional 6Mhz channels, but also FCC had proposed a 'flexible use' of channels which meant that broadcasters would have been free to decide what to do with the additional channel as soon as they began to broadcast a HDTV channel. However, Reed Hundt indicated that 6 Mhz channel could now be sliced into 6 separate channels by digital compression. More importantly, Hundt pointed out that the principle of 'flexible use' would allow broadcasters to offer additional services like wireless internet connection and related interactive services. Given that new services would generate the revenue of broadcasters, Hundt argued that FCC had to auction digital channels

to broadcasters as well, instead of allocating spectrum to broadcasters free of charge (FCC, 1995: 5 cited in Parades, 2000: 77). Shortly, two choices were at stake for the public authorities: the plan ratifying the restriction on initial eligibility of HDTV licenses and then digital television licenses to incumbent broadcasters and a new plan for limitless auctions for spectrum open to everyone.

However, at last, FCC proposed a plan in 1996, called as "second-channel loan plan." With this plan FCC abondoned the idea of autioning licenses allocated to terrestrial broadcasters, instead it was aimed to have broadcasters to empty the channels they used at once and then to sell that new freed channels: According to this plan, all existing terrestrial broadcasters would get a second channel to be used simulcasting which means a channel would make analog and digital transmission at the same time, but in return transition to digital terrestrial television would be shortened and spectrum plan would be modified to allow more frequencies to be reclaimed for possible future uses. Besides, after analog transmission would be shut down, extra channels would be returned to the public. And broadcasters would be free in making broadcasts in the form of HDTV digital or SDTV digital. And this proposal was ratified subsequently as the plan of switchover. As a matter of fact, the reason behind this decision was the success of broadcasters' lobby which were defending their position by the mid-1990s. As mentioned above, the main argument of the broadcasters was that if the auctions would have been made, many broadcasters could have been excluded by powerful corporations coming from other sectors like telecommunications. According to broadcasters, auctions would thus have turned the public spectrum into private spectrum and that would have been against the public interest.

As a matter of fact, what was at stake for the government was to facilitate and accelarate this broad change of television infrastructure, and as in HDTV analog, to encourage the broadcasters to meet the cost of switch in the time given by 1996 Act. Therefore the timetable problem and question of how to meet the cost of the switch was the real reason behind the decision of FCC as to the spectrum allocation and conditions of the spectrum use.

On December 24, 1996 Congress approved the Telecommunication Act which sets a timetable for the completion of switch to digital terrestrial including above mentioned conditions. According to this Act, switch process would be completed by 2006 and by this time at least 85% of total television households would have been adopted digital receivers. According to timetable:

1. By April 1, 2003, 50% of analog programming had to be simulcast on one of the digital channels.
2. By April 1, 2004, broadcasters would be required to simulcast at least 75% of their video programming on both the analog and digital systems.
3. In 2005, broadcasters would be required to transmit all their video programming on both analog and digital services.
4. By the end of the transition period, in 2006, analog broadcasting licenses would expire and their spectrums would be returned back to the government. The analog transmission would be shut down, although this would depend on how many people still rely on analog television (Katz, 2005: 128).

Thereupon, commercial DTT (Digital Terrestrial Television) broadcasts began in ten cities in late 1998. However, almost seven years later, in 2003 proved to be very slower than was anticipated, with controversies over *technological standards* (display standards) of access to digital television, high prices of digital receivers, and a lack of digital delivery systems and programs (Book, 2004: 30). First of all, although 1996 Act had decided what digital transmission standard to be used for digital terrestrial television, it had been left to the market what receivers to be used. As a result, there emerged very different incompatible receivers in the market with different costs for the viewers. Due to the fact that any certain receiver standard had not been determined and the high costs of receivers decreased the speed of switch process. As a matter of fact, till 2004 the prices of receivers remained very high.[29] However, it seems so that the most important problem for the delay in switchover process has been the reluctance of broadcasters in investing in improving digital television content in spite of the fact that they had got what they had wanted in terms of spectrum allocations. The adoption ability of viewers to get digital receivers was proposed as the main reason for slow digital penetration by the broadcasters. In other words, 'chiken-and-egg'

[29]At of the end of 2004, 16 million digital television products worth $26 billion had been sold, the vast majority of which were HDTV products. Sales in 2004 were approximately equal to the sales in all prior years, and 2005 sales are projected to double those of 2004. The prices of ATSC products continue to fall very rapidly, with HDTV set-top boxes as low as $200, HDTV monitors as low as $400, HDTV integrated receivers as low as $500, and integrated standard-definition (SDTV) receivers as low as $300. Indeed, the prices of HDTV receivers are rapidly converging with those for analog televisions, and large screen analog televisions have mostly disappeared from the market (Graves, 2005).

dilemma was proposed for the delay. However, it was a fact that broadcasters were given extra channels without any charge just in order to overcome this problem.

Actually, another stake for the terrestrial broadcasters was 'advertising-revenues'. Since the 1996 Act had not authorized the cable companies, which controlled the 60% of television access in USA, to carry digital signals of terrestrial broadcasters, 'advertising revenue' of terrestrial broadcasters would probably be bad-effected unless a modest transition would be realized. However, in transition to digital television the only stake is not the 'advertising revenue' but keeping the control of 'spectrum' in the name of sustaining 'free television 'in an environment gradually dominated by pay-televisions (on cable and satellite platforms) which are not subject to 'public interest' obligations.

In fact, what broadcasters arguably wanted was extra compensations for investing into digital television. They apparently want to benefit from not only use rights of extra spectrum allocated to them by the 1996 Act but also improving *new digital services* including VOD and internet services etc.. Accordingly, the FCC's rules as to the use of extra channels were not strictly framed. These rules "allow broadcasters great flexibility to use digital technology to offer whatever services they want to, as long as at least one free digital television signal of SDTV quality is available at the same time." (Katz, 2005: 124). As a result, there has been no commitment to use the digital channels primarily to provide HDTV digital which occupies whole channel allocated to them, whereas many broadcasters have preferred to provide SDTV services and use the rest of their spectrum for commercial applications (Katz, 2005: 129). Accordingly, terrestrial broadcaster networks like NBC and ABC have recently begun to broadcast their top-ranked television series on internet, albeit 'free' for now. In this respect, it can be argued that new revenue generating applications like VOD (Video-on Demand) is on the agenda of broadcasters.

Consequently, as a very recent development, a new digital switchover target has been approved by Representatives Senate in the US, as 2009. According to this bill more than 21 million terrestrial television households are still on analogue in US and it may take an additional 10 year to complete switchover process. Hence, it is also proposed in the bill to *subsidize low-income households by the state* to enhance the process. It is naturally strongly backed by broadcasters and consumer electronics firms and the other supporters of the process (http://www.dtg.org.uk/news/news.php?id=1368).

The switch-off date for analog transmission seems to turn into 2008-2010 because of the further problems in adopting capacity of consumers and technology standard problems. Besides, the uncertainties are most likely to remain as to how to use additional interactive services after DTT on terrestrial 'free channels'. Therefore, the returning date of additional spectrums loaned to terrestrials *has still not been certain either*. However, it can be said that American switchover process has one of the highest digital penetration level in the world. Today, there are 1,500 stations on the air in 211 cities reaching virtually all television households with at least one digital signal. 90% of television households have potentially access to five digital signals and some large cities have more than 20 digital signals on the air. Even so, taking into account that the process started in mid 1990s, penetration level is still slow.

3.2 Transition to Digital Television in European Context

In order to understand the Britain television system conversion to digital, first of all, it is necessary to understand the general transformation of communication policy in European context. Besides, since European Commission has played a key role in setting EU's digital standards, a brief development of digital television has to be explained in European context in this separate section.

A general transformation in the regulation of communication environment in the European Union context has been clear since 1980s: a radical turning from culture oriented communication policies to communication policies privileging economic initiatives. As a result, a series of some certain policies characterized by deregulation, privatization and commercialization as the extentions of the neo-liberalizm have changed the public-service character of European broadcasting environment. Rapid expansion of media infrastructures that primarily includes the proliferation in the number of commercial radio and television channels[30], and introduction of pay television in the television market proved to be the concomitants of the process.

In this context, the primary aim of European Union has been to create a single European economy and a European market. It has thereby been pursued to facilitate the emerging of

[30] By 2000, the number of channels exceeded 580, while it had been nealy 90 in 1989, and most of them were private of course (Papathanassopoulos, 2002: 14).

powerful companies to compete with their international counterparts (particularly USA and Japan) (Gencel Bek, 2003: 24). In this respect, it has been widely believed in EU, the fragmentation of the European information communication market had to be ended. In this context, EU considered the transition to digital televison as an opportunity to create a unified telecom and broadcasting sector to be organized according to private *commercial initiatives*[31].

However, since there was no certain right to intervene member's audio-visual laws in contructing Rome Treaty, common audio-visual policies had taken effect only with the decisions of The Court of Justice of the European Communities untill Amsterdam Treaty. Taking effect on 1 November 1993, Amsterdam Treaty included an act (Article 151, Act 128) related to culture that mentions specifically audio-visual sector. According to this, when it is necessary, Community plays a complementary role in supporting functions in the area of culture including audio-visual sector.[32]

[31] Protocol on Public Service Broadcasting which was annexed in the Amsterdam Treaty in 1997 reveals the perception of EU to new era of broadcasting. According to the protocol, member states can continue to fund public service broadcasters as long as such funding does not affect trade and competition in the European Community. Moreover, the European Court of Justice which has had profound effect on communication field defines broadcasting as a "treadeable service". Therefore, in the process of digital terrestrial television projects, the state aids for state-owned broadcaster and the other terrestrial commercial broadcasters may be drawn into an EC investigation.

[32]As a matter of fact, legal efforts and researches to construct a common audio-visual market had already begun in mid-1980s. In 1984, Green Book which was related to building a single communication market in Europe was issued by European Commission. Next Year, a White Book was published on complementing single market. In White Book, among emphasized aims were relaxing the rules of entering communication market and the development of HDTV. And it was the year 1986, in which the aim of constructing a common Community 'Audio-Visual Policy' was mentioned explicitly by the commission. On 27 April 1989, council of ministers determine some certain targets to construct a general strategy for advanced television system. In December 1989, a common decision was accepted to move together for accepting a single production standard of advanced television worldwide. The Agreement of 'Television Without Frontiers' which was published on 3 October 1989 and revised in 1997, was a real turning point as well. This agreement has been operating for bringing about a common television service in community. To implement the agreement, member countries founded independent regulatory agencies, employed new officers and resources. Public interest was at the front in this treaty. Like Media Program supporting European film productions aganist American and other foreign productions, The Agreement of Television Without Frontiers aims at protecting and improving domestic productions and existing broadcasting system on market-driven base, actually.
İktisadi Kalkınma Vakfı (Economic Development Foundation), Avrupa Birliği'nin Telekomünikasyon ve Görsel-İşitsel Politikası Raporu (The Report on EU's Telecommunication and Audio-Visual Policy), İstanbul Aralık, 2003

In this context, The Green Paper on the Convergence (1997) does reveal the European approach of post-80s era concerning the new technologies:

> Convergence is not just about technology. It is about services and about new ways of doing business and of interacting with society.(ii) The changes described in this Green Paper have the potential to substantially improve the quality of life for Europe's citizens; to better integrate Europe's regions into the heart of the European economy, and to make businesses more effective and competitive on global and national markets.(ii)
>
> The future regulatory environment will be of crucial importance. The European Union has already developed a comprehensive framework for managing the transition in telecommunications from a monopoly to a fully competitive world from 1 January 1998. We have also put in place a framework supporting an internal market for broadcasting. Getting the right regulatory framework must be firmly placed within these existing achievements. At the same time, this Green Paper represents a milestone in allowing the Community to look beyond the 1998 deadline and to assess the implications for the sectors affected by convergence.

Thus, The European Commission's Green Paper on Convergence[33] (1997) proved commission's certain impact on new communication policies. In this paper, the idea of expanding Open Network Provision principles of preventing the foreclosure of new entrants into a network industry which was dominated by a few operators to broadcasting area was opened to discussions.

Two subsequent Directives in 2002 gave further opportunities to Community to intervene in the process of digital television. In one of them, Framework Directive, the Community stated that the mandating standards might be imposed in case of market failure to ensure interoperability and the internal market objectives. The other one, the Access Directive, allowed the member states to imposed "behavioral rules" one dominant providers of digital television service including 'must-carry' obligations to ensure program diversity.

Consequently, it is a fact that community has had certain impact on transition to digital television in European context. In this context, EU's motive of balancing harmonizing member countries' policies has always formed its policy on HDTV and digital television. This determining motive is clear at last call of European Commission related to the switch-

[33] EC, 3 December 1997, Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation, COM (97) 623, Brüksel. s. ii, 11, 15-16.

off date. According to this, The EU Commission calls on member states to set a 2012 deadline for analog switch-off. Thereafter, six European Countries including UK declared that they revised their deadline as 2012.[34]

Nonetheless, EU's regulations concerning to digital television has been limited to decisions concerning the transmission standards rather than detailed regulations as to the member countries's switch-over process. In this respect, the incompatibility between technological standards adopted by member countries was the first problem to be dealt with. As a matter of fact, Community had had to form member states' advanced television policies as of 1980s, as a response to Japan's attempt to make NHK-developed analog HDTV standard. After rejecting Japan's efforts, initially, a plan had been formed on EUREKA framework (created in 1985, a pan-European network for market-oriented, industrial R&D) which was simple and classic as an industrial policy project: "the publicly owned telecommunications operators would build the infrastructure (satellites in this case), national champions in consumer electronics would manufacture compatible television sets, and public broadcasters would transmit programming in the new format." (Galperin, 2004: 132). Yet, technical problems and reluctance of private media organizations to enter a risky area did not permit to implement the plan as expected.

On July 1993, the Council of Ministers released an Action Plan for the Introduction of Advanced Television Services in Europe and Council itself began to be interested in the development of digital HDTV (Decision 92/424/EEC). Digital Video Group as an organization including equipment manufacturers, broadcasters, content producers, software producers was established in the meantime (1993). Prominent digital video broadcasting standard 'DVB' was developed by Digital Video Group for HDTV digital.

Having determined standards for digital television (most of the standards were already ready), DVB Group open the incompatible decoder/set top box problems to negotiations in accordance with the statements taking place in The Green Paper on Convergence. DVB Group would try to prevent incompatible decoders by setting common standars for digital television. However, pay television operators like BSkyB and Canal+ against public

[34] In an official statement related to this call, it is argued that the switchover would stimulate the innovation and growth of consumer equipment market across EU.
For further information see http://www.dtg.org.uk/news/news.php?id=898

operators like BBC, ARD and ZDF, defended their *proprietary (closed system)* decoder technology. Because, existing model was the *business model* whereby pay television operators provided their own receiver set-top-boxes and softwares. By controlling the CA technology a pay television operator would be able to exert its dominant power on programming level, for example, by not granting access to the technology for potential competitors in content provision. Moreover, with set-top-boxes included licensed proprietary CA software, pay television operators now have power of determining the channels in an order they ordered in EPG systems (Electronic Program Guides).[35] In comparison to this model, DVB Group and public broadcasters and other broadcasters suggested to develop a *common receiver (open system)* that would allow using different decoders in a single set-top-box. The 'open' system thus had the potential to enable newcomers, such as small broadcasters, gain access to market. Because viewers would be free to choose any operator they want without meeting additional set-top-box costs.

As a matter of fact, it was a battle of control on access to digital television. The public broadcasters did not want to leave the decision of choosing the channels to be displayed on digital television to the private broadcasters. Nevertheless, European pay television operators leaded by Canal Plus and BskyB were very keen on developing proprietary (closed) systems. They were arguing that 'open' systems would keep market fragmented and they threatened that unless their dominant position was ensured in digital television market they would not be able to invest into improving digital services because of high risk in getting revenue.

The negotiations remained unresolved for a long time, and it was then understood that the DVB group which had been expected to reach a voluntary consensus would fail. And thereupon, Commission takeover the control and issued rules in European Parliament and Council Directive on the use of standards for the transmission of television signals in 1995. Even so, the decision taken by the Commission was limited to only transmission standards like the FCC's final decision on terrestrial transmission standards. According to this, DVB's transmission standards would be mandatory (Figure 1,2,3), but CAS (conditional access system) standards problem was left to industry. Or rather, this problem was left to the national regulatory authoritives (A. Hart, 2004).

[35] For example, in England BBC had to make a CA contract with SKY: In 2003 it was announced that BBC would no longer use SKY's CA system. This decision meant that digital satellite viewers in the UK will be able to receive the BBC channels without a Sky viewing card through any make of digital satellite receiver. It was also declared that this decision would save 85 million pound of BBC over next five years.(http://www.advanced-television.com/2003/News_archive/archivefront2003.html)

In short, faced with the risk of generating incompatible standards across Europe controlled by a few powerful companies, European Union chose recognizing proprietary CA operators to courage the companies to invest in digital services (The Directive of 95/47/EC on the Use of Standards of Transmission of TV Signals). As Grimme argues, recognizing proprietary CA operators was a failure in protecting the consumers/users and public broadcasters against pay television operators. However, it was seen as the only way to provide an incentive for existing pay television broadcasters to develop digital television services (Grimme, 2002).

However, as stated above, digital television has primarily and dominantly been realized by the satellite pay television operators. In this context, for European governments, accelerating the switch to digital terrestrial television turned into being an important issue in terms of balancing satellite pay television operators, as the digital penetration increases across the countries. Nonetheless, apart from the England where 'Freeview' terrestrial platform has had recorded very strong progress by reaching nearly 50% of the households by 2006, any country in Europe could not make substantial progress in broadening the digital terrestrial television coverage. Especially in Italy, France and Spain the switchover process for terrestrial television proved to be fiasco. In Germany where cable connection is major, the lack of infrastructure and investment has slowed the process of progressing digital television across country.

In this process, in most countries in Europe a "leadership" role has assigned to public service providers either through the one or more multiplexes to manage independently and/or through the provision of specific financial resources in order to create more competitive television market in digital era. However, public services broadcasters seem to have to face with financial problems in the process. In this respect, England appeared as an important example which may be instructive.

3.2.a Conversion to Digital Television in the Britain

British broadcasting system is generally identified with the BBC (British Broadcasting Corporation) which is also identified with the "Public (Service) Broadcasting". Because BBC has long been *model* for many European Countries' broadcasting system where public broadcaster monopolies prevailed in the Post World War II era. However, in contrast to these countries where public broadcasters saved their monopolies till mid-1980s, the British

Broadcasting system had switched to dual broadcasting system in which ITV (Independent Television- advertising-supported television network) and BBC (license fee-supported television) broadcasted together, as early as 1955. However, that has never implied that public service broadcasting character of British broadcasting was damaged. In fact, the private broadcasting channels comprising ITV network have always been regarded as the part of public service broadcasting[36].

For this reason, till late 1990s, terrestrial broadcasters kept their dominant position in British broadcasting system in spite of the fact that conservative governments were not very pleased with the position of public service broadcasting.[37] Because, unlike the USA, the introduction of cable television which had been promoted by the governments in 1980s as an opportunity to provide high-bandwidth information services could not challenge the terrestrial broadcasters. Because, the penetration of cable television has never been high as much as expected, in spite of the fact that cable television was not subject to strict content regulation to attract investment.[38] As a result, Britain has remained a terrestrial television country like Turkey. However, the launch of digital television of BskyB (Sky Digital) in 1998 rapidly became a serious challenge to the existing order[39].

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[36] For further information about how British television policy is organized see at Franklin,2001

[37] Television broadcasting was a part of Thatcher's and subsequent conservative governments' agenda for change in Britain. According to this, free-market mechanism had to be involved in the operation of broadcasting in order to break the monopolistic order in broadcasting and to alter the way of BBC was funded by license-fee which was seen as illegitimate in circumstances of declining audience share in a multi-channel environment (Franklin, 2001: 47).

[38] Despite the high capital investment, penetration and use of cable television was not over 11% by 1998.

[39] Satellite pay television market in England is entirely in the hands of BskyB which is controlled by News Corporation, one of the biggest media moguls in the world. BskyB had first launched as Sky in 1979. The process that led the rise of Sky began in 1981 when The Study of Direct Broadcasting by Satellite was published in UK. This study claimed that a powerful national satellite industry was needed to ensure its share in international growing direct broadcast satellite sector. For the then government, this could be accomplished by the private sector. In 1986 a consortium comprised by some ITV companies and electronic companies Armstad and Virgin, British Satellite Broadcasting (BSB) was licensed by the government. However, Sky's launching of its DTH (Direct to Home) broadcasts with unencrypted, advertising-financed four-channel content in 1989 one year earlier than BSB changed the situation. After a short term of fierce competition between two rival DTH operators BSB failed financially before the Sky. Two operators thereupon merged in 1990 to become BskyB (British Sky Broadcasting). Same year Sky became encrypted broadcasts. Satellite television in UK really began to take off when BskyB got the rights of sports events in 1992. Between 1992 and 1996, all content of BskyB switch to encryption. Pay-per-view services also began in 1996.(Grimme, 2002: 160-164)

As a matter of fact, prior to the launch of digital television in 1998, more than two-thirds of the 23 million UK television households only received the terrestrial programs which were offered by nearly 5 channels consisting of British Broadcasting Corporation (BBC 1 and BBC 2), the public service broadcaster and commercial channels ITV, Channel 4 and Channel 5. Besides, the popularity of public and commercial channels was virtually equal. However, meanwhile, by 1996 the pay television services had managed to attract a great amount of viewer. By 1996, there were 5 million pay television subscribers (4 million BskyB and 1 million cable operators) which constituted nearly the one fifth of the television households.

In this context, the first governmental publication, The White Paper, as to the regulation of transition to digital terrestrial television was published in 1995[40]. The White Paper, in essence, was representing the framework of Conservative's broadcasting reform of 1990 which means allocating more licenses to *commercial operators under the light regulation of ITC* (Independent Television Commission).[41] Nevertheless, The White Paper departed from the original conservative approach in two respects: Firstly, it allowed some space for public service broadcast and secondly, instead of auctions for broadcast licenses, it brought about new conditions for those who was seeking to get digital multiplex licenses, as follows: the capability of investment in infrastructure technology, and investment to encourage people to adopt digital receivers, and the capability of providing program diversity in digital environment. The purpose was to facilitate early take-up of digital television (Brown: 2005).

Like the USA's FCC, Britain's public authorities thereby chose encouraging terrestrial broadcasters who did not want to invest in digital terrestrial television, by extending the scope of *commercial activities* for terrestrial broadcasters. ITC was assigned to license pay terrestrial multiplex operators in order to promote the competition in broadcast industry which might end the dominant position of Sky Digital. Therefore, of six digital multiplexes available for digital terrestrial television three were allocated to BBC, Channel 3 (ITV), Channel 4 and Channel 5, namely existing free-to-air terrestrial broadcasters. And the other three multiplexes were decided to allocate to one terrestrial television operator without *any*

[40] Indeed, the launch of DTT had been in the agenda since 1991 when ITC (Independent Television Commission) prepared a study on frequency planning as to DTT.

[41] The White Paper of Broadcasting of 1990 involved the sharper theme of conservative deregulation policy in Britain in the early 1990s: Allocation of terrestrial broadcast licenses by competitive bidding between broadcasters; in other words an auction as would be offered in USA by then government and FCC.

mandated use. For these non-mandated multiplexes there were two contenders: DTN (Digital Television Network) wholly owned by a cable company Cabletel and BDB (British Digital Broadcasting) a joint venture between Carlton and Granada (biggest players in ITV market) and BskyB. Both of them were formulated on *pay-television* model. DTN declared that it would compete on the basis of price and very different offer on programs and interactive services from the satellite and cable pay televisions. In response to this, BDB presented very weak incentive to compete on prices and seemed reluctant to offer more diversity in programs and interactive services. Rather digital terrestrial television was perceived as family entertainment. Even so, BDB was given the license. ITC's justification was that BDB offered a greater degree of assurance than that of DTN. Because ITC considered that BDB had much more capability of investment in infrastructure.

However, the presence of BskyB in BDB consortium was seen as a big problem in terms of competition. After European Commission pointed out the situation, ITC decided BskyB to withdraw. Thereupon, Granada sold its 11% stake in BskyB and BskyB withdrew from the BDB consortium in 1997. However, BskyB remained as major content provider. This development made BskyB a competitor to BDB which would be rebranded as ONdigital. ONdigital began to broadcast in November 1998, six weeks after the Sky Digital. Sky Digital was much more advantageous than the BDB in terms of channel number and interactive services. Even so, the competition lasted till 1999 when Sky Digital announced that it would provide *free set-top-boxes for customers*. Although, Ondigital did the same, less than three years Ondigital rebranded as ITV digital faced to big investment problems and failed. In April 2002 ITV Digital, jointly owned by commercial broadcasters Carlton Communications and Granada Media Group, filed for bankruptcy[42]. This financial crisis was mainly caused because the consortium failed to attract viewers. It was launched with a target of winning 2 million viewers by 2003, but it only signed 1.23 million before its closure.

[42] The problem was that ITV Digital offered limited number of channels compared to rival BSkyB, most of them with unattractive content. The service was launched with a handful of its own channels, a few old favourites such as UK Gold, and a smattering of BSkyB channels. BSkyB had, with Carlton and Granada, been one of the service's original backers, but was forced to pull out over competition concerns. ITV Digital found itself competing in the same market with BSkyB which had already established a large subscriber base by giving out set-top boxes. The pay satellite broadcaster continued its successful campaign of winning customers with dropping to zero charges for decoders and waiving connection charges and ITV Digital was forced to emulate this strategy.

The collapse of ITV Digital was at the same time the demise of government's plans as to the switchover date which had previously been laid down as 2006 in The Broadcasting Act of 1996. It was also the end of efforts of bringing competition to pay television market in England.

As was in USA, terrestrial broadcasters were reluctant to launch digital television due to the high investments needed to improve content to compete in digital market and uncertainties with regard to market developments and the regulatory framework. It was the government that provided incentive for existing broadcasters.[43] It was therefore, on the collapse of ITV Digital, in the spring of 2002, the government licensed the BBC and Crown Castle International (Telecommunication Company) to form a new platform to facilitate the digital switch. The BBC and Crown Castle submitted a joint bid which included the creation of the Freeview (Free-to-air terrestrial digital platform) brand, and the intention to create DTV Services Ltd, a body designed to promote the Freeview brand and DTT (Digital Terrestrial Television) generally. A third partner in DTV Services Ltd was BSkyB.

On 30 October 2002, Freeview terrestrial platform launched in the UK, which re-launched DTT as a *free-to-view service* offering around 30 TV channels and 16 radio stations. The Freeview package includes all of the terrestrial channels, some extra BBC channels, and a selection of the thematic channels. However, in spite of the fact that 'Freeview' had been declared to provide only free(open) television channels, a package of subscription channels was added under the name Top Up TV on 31 March 2004.

In this process, BBC was assigned a privileged role in digital take-up, particularly after the demise of ITV Digital- digital terrestrial pay television model. BBC was forced to offer new

[43] According to Galperin there were at least four reasons leading government to support a rapid migration to DTT. First, a digital terrestrial pay television platform might challenge the dominant position of BskyB in a way that cable had been incapable of. Secondly, launching DTT in advance of other nations would give manufacturers an opportunity to enter new markets. Thirdly, shutdown of analog transmission would provide valuable spectrum to be auctioned. And the development of DTT would create potential to develop new services. Moreover, DTT would be more amenable to national regulatory control than satellite wholly controlled by BskyB and cable companies increasingly controlled by US investors since the lifting of investment restrictions in the 1990s. Moreover, BBC also supported rapid migration to DTT which was seen a good chance in digital age. The BBC was anyway expected to play an important role by the government. However, the White Paper on the Future of the BBC released in 1994 made it clear that government supported the BBC's enthusiasm about DTT but wanted the privatization of its transmission networks to meet the cost of improving digital transmission and avoided allocating license fees to finance new services(Galperin, 2004: 164-173).

digital content to facilitate the transition by encouraging people. It is required to provide an attractive free-to-view package, appealing enough to motivate consumers to invest in the necessary receivers. For this purpose it has proposed and obtained approval for a new set of digital services, including *BBC 3, BBC 4, CBBC, Cbeebies,* alongside *BBC News 24* and *BBC Parliament*.[44] It is also required to offer affordable free-to-view receivers which consumers can buy with no subscription strings attached. In mid-2004 digital terrestrial television set-top boxes were sold from as little as £50.

A company was also established, called as "SwicthCo" in order to organize the public demand for Freeview platform, in 2005. The company was formed by terrestrial broadcasters and equipment manufacturers. It was assigned to coordinate the switchover process in terms communicating with the public, providing harmonization between equipment manufacturers and broadcasters and thus organizing the timetable of switchover. (www.dtg.org.uk/news/php=802)

Even so, the BBC services have been the major driver of Freeview penetration. But, as a consequence, BBC had to face with high costs. Contrary to previous announcements increasing costs has led to increases in license fees paid to BBC. According to news, the true annual cost of the BBC's expansion into digital broadcasting could be nearly 500 million pound in 2005- far more than the 279 million pound figure included in the latest annual report in 2004. BBC defended itself announcing that this money was spent to enhance the switching society to digital era. However, the dispute over pay television services which might include gambling and pornography became very hard to legitimate for BBC. Even if, BBC initially tried to avoid free content for pay television channels in Freeview platform, it failed and had to drop its objections to the new services. This situation led further viewer complaints about the BBC and the Freeview platform (Guardian, July 16 2003).

As a matter of fact, the development of digital television has placed the issue of financing BBC at the sharper focus. To need to develop new services in digital multi-channel market

[44] According to a 2004 BBC report (BBC Annual Report 2004), the Corporation's investment in its digital channels and promotion for them 'has played a strong role in exciting consumer interest in digital, tackling consumer confusion and assuaging fears', and that the continuing consumer enthusiasm for DTV during 2003 'makes achieving UK-wide digital switchover with the Government's timetable an achievable objective'. For Further Information see at BBC, 2004.

had created renewed demands for the BBC for new financial resources. In this respect, in 1997 BBC had formed a joint-venture with a programming company, Fletext. The objective was to launch eight new channels for the UK digital television market. These channels were to be displayed on all digital pay television platforms. These channels were *not part of public service broadcasting*. Moreover, when BBC started its digital transmission in 1998, in addition to its BBC1 and BBC2 digital retransmissions new value-added channels and services was introduced.

However, it is a fact that the success of Freeview platform in increasing the number of digital television households has made the UK world leader in digital television penetration. Today, over 50% of all UK homes are now accessing digital television services as shown by table 2 below:

Table 2

Digital Television Penetration in Britain

Digital television uptake		
Platform figures for Q1 2005 and Q2 2005		
Pay TV digital subscribers	**Q1 2005**	**Q2 2005**
Digital cable	2,544,048	2,601,354
Digital satellite (Sky)	7,349,000	7,424,000
TV over ADSL	20,000*	20,000*
Total digital pay TV households**	9,913,048	10,045,354
Free-to-view digital households		
Free-to-view DTT (Freeview) homes	5,059,350	5,177,824
Free-to-view digital satellite***	445,000	492,000
Total Free-to-view homes	5,504,350	5,669,824
Total UK digital households	**15,417,398**	**15,715,178**

Table 2: Continued

Digital penetration	**61.9%**	**63.0%**

* The Q2 figure for TV over ADSL includes Homechoice figures as at 31st January 2005.
Homechoice figures for the end of June 2005 are not in the public domain.
** Pay TV households does not include figures for TopUpTV, Q2 figures are not in the public domain.
TopUpTV subscribers are therefore counted in free-to-view digital terrestrial homes.
*** Free-to-view digital satellite comprises the number of 'Solus' card viewers plus an estimate of the number of ex-Sky subscribers who continue to use their set-top boxes for viewing Free to view channels.

Resource: http://www.ofcom.org.uk

Its leadership in digital television penetration seems to have created many advantages for England. According to a report, ten major manufacturers locate their R&D facilities in the UK because of its leadership position in digital television market. In 2003 in the UK, over 2 million set-top-boxes were sold or provided to customers by pay television operators; worth around £160 million – and over half were made in the UK, creative industries in the UK generated £7.7 billion from television in 2001 (DTG, 2004).

Meanwhile, Sky Digital has been experiencing a continuous growth. As CEO James Murdoch has declared, Sky Digital is seeking to extend the base of DTH subscribers to 8 million. In 2004, Sky managed to increase the number of subscribers more than 16%. As well as the number of subscribers, the revenue of sky after tax is growing. Total revenues of Sky Group rose up 16% to 2.7 billion pound in 2004 and the share of interactive services in this did also rise up 50% to 219 million pound. (http://www.dtg.org.uk/news/ news.php?class=&subclass=&id=16)

Sky Digital's growth seems to have brought about more concentration to the television broadcasting rather than competition as was expected by conservative governments. In 2005, NTL announced its purchase of its rival Telewest, establishing a single dominant cable company offering cable, satellite and telephony services in the UK. The merger is widely rumoured to be intended to create an effective competitor to BSkyB. Moreover, two biggest terrestrial content provider of ITV network, Carlton and Granada were announced to be merged in 2004 to constitute a more "competitive" company.

3.3 Discussion

The common points are evident in USA and Britain where digital television has substantially replaced the analog television systems. Firstly, governments and regulatory authorities seem

to have left the decisions to the market particularly in cable and satellite television sector which have been lightly regulated since their inceptions. Consequently, digital television is mainly being realized on cable and satellite where pay television implementations prevail, as new digital value-added services and PPV and VOD programmes. Besides, the CAS systems which are controlled by the operators themselves refers to a threat for the viewer choice and public service broadcasters. As for the terrestrial, governments are eager to accelerate the switch to digital terrestrial television. However, in return of facilitating the switch of terrestrial infrastructure, private broadcasters are expecting a series of new rights. In this context, it is observed that like the cable and satellite television, with digitalization new channels and digital pay television services are to be allowed for traditional channels on terrestrial channels. Besides, private broadcasters are expecting public to reduce the commercial risks and burden of switch. Espically in Britain context, the BBC's role in digital switch is a proper example in this repect. As a result, the erosion of public service/interest broadcasting at both countries seem to continue in digital era.

CHAPTER 4

DEVELOPMENT OF DIGITAL TELEVISION IN TURKEY

The digital television has already made its debut in Turkey and today a complete conversion of the television broadcasting into this new system is one of the major concerns of the Turkish media policy. As a matter of fact, Turkish media environment underwent significant qualitative and quantitative changes parallel to important social, political and economic transformations experienced in the society during the last two decades as a whole. Therefore, it will be appropriate first to give a biref account of these changes in the Turkish media landscape.

4.1 The Development of Broadcasting in Turkey

Until 1961 state-run radio broadcasting did not enjoy any autonomy from the governmental authorities. New Constitutional Law at 1961 granted autonomy to broadcasting activities and an autonomous agency (TRT-Turkish Radio and Television Corporation) was set in 1963. However, this authonomy was abolished by an amendment to the Constitution in 1971. First regular television broadcasting in Turkey started only in 1968 and did not display any substantial development till 1980s.

The most comprehensive transformation in broadcasting in Turkey took place in 1980s. It is a fact that, 1980s marks a turning point not only for broadcasting but also for all political, economic and social life of the country. This term begins with another military intervention which had direct control and pressure over the press and TRT; however, at the same time under the military control, broadcasting and telecommunication environment began to experience important developments. Under the conditions of military control, video as a new technology appeared in the market, and color television and multi-channel TRT broadcasting was launched. At the same time, in accordance with the international military needs long-term plans were prepared as to the modernization of telecommunication infrastructure. In this context, a Communication Major Plan (Haberleşme Ana Planı) covering 1983-93 was published. With this major plan, for the first time the issue of renewing telecommunication infrastructure suitable for ‘digital data transmission’.

However, new and more radical transformations in media landscape were observed after the market-based and outward oriented economy model was adopted under the ANAP (MotherLand Party) rule which is primarily characterized by Turgut Özel founder president of the party, between 1983 and 1991. Özal is at the same time is oftenly regarded as the symbol of neo-liberal ideology and economy policies in Turkey. Economic liberalism of Özal privileged the "development" of the nation above all and required the whole transformation of then Turkish society. In this context, media had a critical role both as a social institution and economic sector. The most important transformation in the process was the rapid increase in the number of media products and outlets and expansion in media environment. In fact, the investments in the media did sharply increase in this term in spite of the fact that investments in other sectors were decreasing. Turkish printed press experienced the first significant change in this context. Adopting latest print technologies and employing intensive advertising campaigns based on promotions, popular papers managed to achieve a circulation of nearing 4 million in 1993, whereas total circulation of newspapers had been nearly 1.5 million in 1980. The rise of popular newspapers concluded with a rapid concentration in press ownership and media holdings in Turkey became to appear thereby.

However, in addition to this quantitative development, a radical qualitative change of the media environment was the most striking transformation. This transformation primarily included the transformation of media ownership and emergence of big media holdings.

4.1.a Transformation of Media Ownership

One of the most striking developments in Turkish broadcasting environment was that big media holdings appeared. Besides, the quality and the quantity of the investments in media sector changed. Beginning from early 1980s, in Turkey, traditionally newspaper owner families vanished gradually from the press sector and were replaced by newcomers who originally had investments in other sectors. The reasons behind the coming of bigger capital groups into media sector are varied. H. Tuncel suggests that the reasons behind the coming of outsider capital to the media sector as such (Tuncel, 1994:37) :

-The belief in the paradigm of that mass communication tools are fourth power in the modern political systems

-Pressure on the political circles

-Social control

-Declining the risk of the investments for other sectors
-Influence over the state awardings
-Instead of expending for advertising, establishing a radio and televisio channel or distributing a newspaper
-Marketing the Products
-Money Trade

As is seen, the reasons of investing in media sector are very varied. The natural concomitant of this process was that media corporations became incresingly involved into bigger capital groups that had varied investments ranging from energy sector to banking. At the same time these capital groups happened to have investments all parts of the media from press to radio and television broadcasting. This process was naturally followed by the emergence of media holdings which took place in bigger capital groups.

In order to control the whole market, these media holdings cooperate in many parts of the sector such as sharing advertising pie. As such, in a short time major part of the media sector happened to be controlled by these media holdings. And these media holdings immediately became typical examples of "cross media ownership". In the first years of 2000, the appearance of these media holdings were as following :

Table 3: Biggest Media Moguls in Turkey in the Firsts Years of 2000

Doğan Group:
Media Sector:
National Televisions: Kanal D-CNN Türk
Cable Televisions: Bravo!-Galaxy TV-Ultra Cable TV
Radio Channels: Hür FM-Radio Foreks-Radio D
Magazines: DBR magazine group
Newspapers: Hürriyet, Milliyet, Turkish Daily News, Radikal, Posta, Gözcü, Fanatik
Internet: E-kolay
Internet Service Provider: Doğan Online
Book Publishing and Press: Doğan Kitapçılık and Doğan Ofset
Multimedia Store Chain: D&R Stores
Music: Doğan Music Company- ANS production
Television Production: Hürriyet TV Production- D Production
News Agency: Doğan Haber Ajansı

Table 3: Continued

Doğan Groups' some other investments: Zigana Elektrik, İSEDAŞ, POAŞ, Dışbank, Doğan Otomolcilik, Otokar, Ray Sigorta (Ray Insurance), Pen Turizm, Doğan Enerji, Anadolu Otomotive.
Çukurova Group: Media Sector: Television: Show TV, Cine 5, Playboy TV, Supersport, Maxi TV, Radio: Alem FM, Show Radyo, Radyo 5, Radyo Viva Newspaper and Magazines: Akşam, Güneş, Alem, Takip, Medyatör, Arabesk, Zümrüt Book Publishing: Yapı Kredi Yayınları Digital platform: DigiTurk Telecommunication and Internet: Turkcell (GSM Operator), KVK, Superonline (Internet), ShowTV Net, Verinet Çukurova Groups' some other investments: YapıKredi Bank, Pamukbank, Genel Yaşam Sigorta and Halk Sigorta (Insurance), Auer İmalat, Çukurove Çelik, Çukurova İnşaat Makinaları, Ompaş Otomotive, Baytur Turizm...
MEDI Group: Media Sector: Television: ATV (associate with Çukurova), Kiss TV, NTV (associate with Doğuş Group), Yeni TV (Regional Television) Radio: Kiss FM, Radio Sport Newspaper: Sabah, Takvim, Fotomaç, Yeni Asır News Agency: SHA Magazines: 1 Numara-Hearst Publication Press and Book Publishing: Sabah D'agostini, Sabah Publishing, Binyıl Publishing Production: Netpaş Network Reklam Film Yapım Yayın Telecommunication and Internet: Turkport, ZD-Net, A-tel (associate with Çukurova Group) Medi Group's some other investments: Interbank, Etibank, Bank-Kreiss AG-Almanya, Halk Sigorta (Insurance, associate with Çukurova Group)
Uzan Group: Media Sector: Television: Star, Kral TV, Teleon, Kanal 6 Digital Platform: StarDigital Radio: Super FM, Metro FM, Kral FM, Radio Blue, Joy FM, Lokum FM Newspaper: Star

Table 3: Continued

News Agency: Ulusal Medya Haber Ajansı Telecommunication and Internet: Rumeli Telekom RT-Net, Telsim (GSM operator) Uzan Group's some other investments: Imar Bank, Adabank, Çukurova Elektrik, Kepez Elektrik, Rumeli Elektrik (Energy), Rumeli Çimento, Şanlıurfa Çimento (Building)

Doğuş Group: Media Sector: Television: NTV, Kanal E, Kanal D (20%) Internet: Ixir, Zeplin Magazine: NTV Mag Doğuş Group's other investments: Garanti Bank, Osmanlı Bank, Garanti Holding, Garanti Hayat Sigorta, Garanti Leasing, Doğuş Sigorta (Insurance), Garanti Technology, Doğuş İnşaat (Building), Houston Enerji

Ihlas Holding: Media Sector: Television and Radio: TGRT, TGRT FM Newspaper: Türkiye, Turkey, Textile Exports, Magazines: PC world, Computer World, Hanımeli, IhlasSport News Agency: Ihlas Haber Ajansı (IHA) Internet: Ihlas.net Ihlas Holding's some other investments: Yurtbank, Otomobilcilik A.Ş. (Otomotive), International Hospital, Bursa Yalove Enerji Dağıtım A.Ş. (Energy), Ihlas Pazarlama (Marketing), Ihlas Dış Ticaret

Source: Adaklı, Gülseren, *Yayıncılık Alanında Mülkiyet ve Kontrol, in Medya Politikaları*, edited by Beybin Kejanlıoğlu, Gülseren Adaklı and Sevilay Çelenk, İmge, Ankara, 2001

The economic situation in Turkey in 1990s, especially the accelarating "privatization" process of public enterprises had much to do with this development. Because, media has arguably had contributions for both these capital group's success in public tenders and in creating a public opinion in favor of privatization. It is therefore natural to see that media of these capital groups make ideological manipulation especially in the terms when the disputes about privatization break out (Dursun:2001).

The number of these media groups has recently dropped to *three* as a consequence of recent economic crises particularly experienced in banking sector. Consequently, that the big capital became a strong actor in Turkish media ended the previous dominant role of state in the broadcasting.

Table 4

Big Media Corporations in Turkey in 2005

Groups

Sectors	Doğan	Merkez	Çukurova
National Terrestrial Television	Kanal D, CNN Türk, Star TV	ATV	Show TV
Cable/Satellite	Dream, Fun TV, Galaxy	Kanal 1	Skyturk, Digiturk
Radio	Hür FM, Radyo CNN Türk, Radyo D	Radio City	Alem FM
Newspaper	Hürriyet, Milliyet, Posta, Radikal Referans, TDN, Gözcü, Fanatik	Sabah, Yeni Asır Takvim, Pasfotomaç Cumhuriyet (Partial)	Akşam, Güneş, Tercüman, Cumhuriyet (Partial)
Magazine	Tempo, Capital, Atlas, Elele	Aktüle, Forbes, Yeni Para	Alem, Platin
Publishing	Online publishing, magazine and book publishing, muzik production etc.	Online publishing, magazine and book publishing	Online publishing, magazin and book publishing
Other Media	Production, DHA, media marketing	Production, MHA, media marketing	Eksen service provider, media marketing
Information and communication technologies	İSS, telekom, cable operator		GSM operator Turkcell, telekom, İSS, cable operator
Other sectors	Banking and finance, energy, otomotive, medical, trade	Enerji, building, hotels	Banking, financing, insurance, trade, otomotive.

Source: Çaplı, Bülent and Tuncel, Hakan, *Türkiye ve Avrupa'da Televizyon:Düzenleme, Politikalar ve Bağımsızlık, Report of Turkey,* Open Society Institute, Ankara, 2005 quoted in Adaklı, Gülseren, *Türkiye'de Medya Endüstrisi, Meoliberalizm Çağında Mülkiyet ve Kontrol İlişkileri*, Ütopya, Ankara, 2006

4.1.b Chaotic Development of Television Broadcasting

It is a fact that the collapse of TRT monopoly in Turkey in the early 1990s was a concomitant of this process. As a matter of fact, beginning from late 1980s, the issue of establishing private broadcasting corporations came to the agenda by the efforts of press sector. In spite of the fact that two of the applications for being private broadcaster were rejected, big capital groups showed thereby their eagerness for entering the television broadcasting sector when the time would be proper (Adaklı, 2006: 230).

Nevertheless, Constitutional situation was an important obstacle before these efforts. According to the Article of 133 of 1982 Constitution which was prepared by the military rule, radio and television broadcasting in Turkey was subject to the state monopoly. In fact, this article was not complying with the rapid transformation of media landscape in the context of changing economy backed by then government and rising economic forces in Turkey. As a result, with the explicit support of President Özal and the then government, one by one, private broadcasting corporations launched their broadcasts from abroad via satellite beginning from 1990.

Thus, the private broadcasting in Turkey was launched without preperation of an initial judicial basis and technical plans. Therefore, this unexpected and rapid development has caused a confusion and a chaotic development. First and most important problem stemming from the de facto starting of broadcasting was that any frequency allocation plan and the principles that would lay down the conditions for getting broadcaster license did not exist. The immediate consequence of this was the abundance of television channels and "electronic pollution" that would leave any free space in television radio frequency interval, especially in big cities.[45]

It is therefore, from the very beginning the legal existence of the private broadcasters has been subject to hard disputes. Particularly RTÜK (Radio and Television Supreme Court) has oftenly been criticized concerning to that analog frequency awarding have not been able to be ended so far. In fact, de facto launch of private broadcasting was a real demise of the

[45] An important problem caused by unregulated launch of private broadcasting was that it was virtually impossible to find a free space in big cities in order to make trial broadcasts for new transmitting implementations such as digital transmission. This problem has been experienced as an important obstacle in technical plannings of switch to digital television.

public monopol system protected by Constitution Article 133 and Act 2954 of TRT (Turkish Radio and Television Corporation Law). However, no step was taken against the "fait accompli", in nearly following three years. This delay deteriorated the situation because of the fact that when it came to 1994 nearly ten national television channels and dozens of radio and television broadcasters were on the air. As well as a lack of preperation for such a development including a detailed frequency allocation plan, the succesful lobby of growing private broadcasters were among the main reasons of this delay, in addition to the national security concerns. This lobby of broadcasters was subsequently proved to be a comforting opportunity for the governments which put into an "ignorance" policy against the issue[46]. Because, it was a fear of governments that what would happen to good relations with broadcasters if a restrictive legislation was to be introduced.

Even so, in 1993 both the Constitutional obstacle was eliminated and a new Law to regulate radio and television broadcasting covering both public and private broadcasters was accepted by the parliament. Thus finally existing law, The Act of 3984, Law on the Establishment of Radio and Television Enterprises and Their Broadcast, was put into practice. This law was at the same time established a new regulator RTÜK (Radio and Television Supreme Court) instead of RTYK (Radio and Television High Council). RTÜK was primarily assigned to make necessary regulations as to the operation of private radio and television channels. In order to carry out this duty, RTÜK was supposed to realize frequency allocation and awarding, at once. Nevertheless, in spite of the fact that an analog frequency allocation map was prepared by 1996, because of the reasons mentioned above, awarding process has never been completed. Instead, RTÜK legalized the existing de facto situation and remained a regulatory agency that only impose sanctions to regulate the content. And this situation has remained as a problem till today. In the process of transition to digital television it would be the first problem to be faced to.

[46] As a matter of fact, this kind of policy reflects a general feature of Turkish media policy tradition. Çaplı argues that the communication policy in Turkey have always been limited to reactive policies, adopted according to the consequences of changes, rather than anticipating the consequences (Çaplı, 2001: 53). The extension of these characteristic of media policy in Turkey is clear in the context of digital television policies.

4.1.c Discussion

It is a fact that quantitive progress brought about a "rich media environment" to Turkey. The most striking change has occurred in the television and radio broadcasting in terms of number of channels. Till the 1990 there were only a few TRT and some non-commercial and public radio and television channels. However, today there are nearly 1500 television and radio channels available in Turkey. According to last data of RTÜK (Radio and Television Supreme Court), the broadcaster institutions that have applied for license are as follows: On terrestrial: 24 National Television, 36 National Radio, 16 Regional Television, 101 Regional Radio, 210 Local Television, 1091 Local Radio; 67 Cable television channels, 22 cable radio; 89 satellite channels, 51 satellite radio. Besides, 15 television channel are available on only cable and satellite platfroms.

However, this quantitive change has a meaning when it is put into a context of general transformation taking place in social, economic and political life of the country. As a matter of fact activating a new capital accumulation model in the axis of globalization and economic entegration with the world in Turkey put the media at a privileged position. And, in the process of deregulation and privatization big capital which was privileged by neo-liberal policies began to prevail media sector beginning from the press sector. In this context, the control of state on broadcasting was replaced by the control of big capital.

Indeed, this process is at the same time the "increased commercialization" of the media. In this process, the media content is determined by ratings and circulations. And this situation is the primary rationale behind the poor quality of media content, so-called "tabloidization". It is therefore, the benefits of our democratic society from this development has always been controversial. The champions of the process has always proclaimed that TRT's partisan and statist "black and white" broadcast was eliminated. Yet, it is a fact that private media are not impartial either. Media corporations protect the interests of the bigger capital groups to which they are involved. It is therefore, this process is at the same time an "oligopolization" process during which big media groups happened to have influence over the political power. This influence has been evident at not only the regulations as to the media organizations, but also the policies related to the whole society. And this influence is also evident in the transition process of digital television.

4.2 Conversion to Digital Television in Turkey

Switch to digital television is shaped by the commercial interests of the private broadcasting organizations and the administrative purposes that embed in these commercial interests. In other words, in the process of the digitalization of television on satellite, cable and terrestrial platforms, the corporate interests are facilitated by the political powers and regulatory authorities. However, the differences between the conditions of the platforms makes the different points worth to consider. For this reason, the developments in these three platforms are summarized separately. Since Turkey is traditionally a terrestrial television country, transition to digital terrestrial process which has recently been started is examined in detail.

4.2.a Digitalisation of Satellite Television

Digital television in Turkey was first realized by pay satellite television platforms which launched their broadcasts without any judicial basis in 2000. The legalization of these broadcasts took more than one year. During this term, the controversies and disputes between public authorities and broadcasters corporations resembles the process of chaotic development of private broadcasting. Like the de facto start of private broadcasting, the launch of pay satellite platforms are formed by the efforts of big capital groups to share the emerging market. And the legal regulation of the new broadcast facilitated the interests of these capital groups.

Satellite is still the only platform by which digital television is currently realized in Turkey, whilst transition process to digital television on cable and terrestrial platforms has recently been started. In 1999 two digital pay satellite platforms were established and launched their broadcasts in 2000: one of them was Rumeli Holding's (Uzan Group) Star Digital and the other one was DigiTurk (Doğan and Çukurova Group)[47]. These were followed by Cine Digital (Avrupa and Amerika Holding), digital version of Turkey's first and only pay television channel Cine 5.

Digital broadcasting in Turkey had come to the agenda of RTÜK in the context of frequency allocation issue in 1998. RTÜK had prepared a digital frequency plan to be submitted to Prime Ministry. In November 1999, one year later, RTÜK sent a final report to Ministry of

[47] In a short time, a controversy between the rival groups occured and Doğan Group withdrew this enterprise.

Transport Communication Supreme Court (HYK) and officially required this issue to be dealt with. Nevertheless, *no political action was taken.* Thereupon, Star Digital and DigiTurk sent a letter to Ministry of Transport and launched their broadcasts in 1999 without any judicial basis. The launches of these platforms were argued to be illegal by RTÜK. However, Türk Telekom A.Ş., a public enterprise responsible for satellite communication, itself had allowed these platforms to broadcast on satellites.

Thereupon, broadcaster platforms argued that they were 'carriers' rather than being 'broadcasters', therefore they had to be considered not according to The Act of 3984, Law on the Establishment of Radio and Television Enterprises and Their Broadcast. Contrary to this, RTÜK emphasized that these platforms were broadcasters since they interfered the content, and regulated channel order and program flow. In spite of this fact, HYK was held to discuss the issue on July 2000 only after National Security Council (MGK) made an official advice to government to lay down the rules and principles for digital broadcasting (Sümer: 2003).

Even so, it took nearly one year to prepare and publish a legal framework for digital broadcastings. At last, RTÜK published two Instructions which were required from broadcaster corporations to be satellite broadcaster and platform operator in 2001. One of them was the instruction that laid down the conditions for being 'platform operator'. And the other one was for being 'satellite channel'. With the instructions all existing broadcasters were required to take permission to broadcast on satellite. According to instructions, firstly, broadcasters or platforms are required to take a license for satellite transmission from TK (Telecommunication Authority) and then secondly they have to take a broadcaster license from RTÜK related to the content issues. Besides, Instructions brought about an obligation to get two licenses from two separate public authorities and imposed some annual fee in return of being operator and broadcaster.

Thus, legal uncertainity seemed to have ended. However, these Instructions were indeed nothing but legitimization of de facto situation which was similar to the launch of private broadcasting in Turkey. Because, these Instructions did nothing but legalize the de facto situations of these satellite channels and platforms. In other words, existing unplanned situation was legitimated. For example, the Instructions did not include any regulation concerning to the *receiver standards* between rival pay television operators. Rival groups

adopted different, incompatible and "closed" conditional access systems (CAS)[48] ; in other words, 'proprietary' systems which eventually would make harder to compete. Indeed, it is a subject of policy and requires a regulation, beforehand. Because, in existing system a platform could not get broadcasts of another platform, and therefore customers who wanted to access more than one platforms content had to use different set-top-boxes. Namely, this is at the same time not in favor of consumer/viewers. Besides, these set-top-boxes had to be purchased and distributed by the rival platforms; namely these set-top-boxes comprised significant cost for the platform operators. This situation would eventually cause a "monopolization" tendency in favor of the media group whose market share and investment capacity was bigger.[49]

It was very important because the pay satellite television market structure in Turkey, from the very beginning, had clear signs of 'monopolization'. Actually, since its inception a harsh competition between big media groups had been expected in the limited economy of Turkey. As early as 2000, it was evident that the collapse of some of the rival operators was inevitable in Turkey, taking into account the consolidation trends of digital television market in Germany and Japan where television market was bigger than Turkey (BYAUM Report, MediaScape 2000). Besides, whereas initially, Turkish digital pay television market was expected to be 4 million subscriber-market by 2004, the economic crises of 2001 reduced expectations to nearly one million.

In fact, in the preparation process of Instructions concerning to satellite broadcasting, the problem of incompatible standards might have been avoided. Nevertheless, it was not subject to hot debates between governments and private broadcasting organizations in the transition process of digital television. In this process, it was an important point that that any regulation to be imposed for CAS systems was a political choice in favor of more powerful

[48] DigiTurk had chosen CryptoWorks, while StarDigital and Cine Digital had adopted Nagravision and Viaccess, respectively.

[49] Actually, there were regulatory solutions that might be beneficial. For example, Sarıoğlu, an expert at Competition Authority, argues that what was proper for Turkey was to impose a regulation that would support 'open' access systems and common interfaces as sectoral standard. Thus, viewers could easily access to rival platform's on the same set-top-box via different "smart" cards. Taking into account the fact that content is divided into "bundels" digital television broadcasting, viewers/consumers would for example buy interactive services of one platform as they would get access to other platforms movie bundle. Thus, the competition in digital pay television market would be based on service quality and cost of the platfrom for the viewer. Besides, it would be proper for the effective use of country's resources (Sarıoğlu, 2003).

capital group. According to an executive of then Cine 5, Murat Küçüksaraç, the regulation as to the *common interfaces* to allow accessing different platforms over same set-top-box was removed intentionally from the text of instructions by RTÜK itself. Küçüksaraç resumes as:

> Instruction took into effect on 21 March 2001. By this time, all platforms had already bought set-top-boxes without 'common interfaces'....In the first drafts of instructions 'common-interface' was included in the text, but then it must have been removed....DigiTurk had already imported 250.000 decoder without 'common interface' and we followed them.... regulators couldn't do that in spite of DigiTurk, anyway (Sümer: 2003).

This dispute has similarities with the discussions taking place in the European Union context. As was seen above, public broadcasters insisted on the "open interfaces" for set-top-boxes; yet, EC could not prevent pay satellite television operators from using "closed-proprietary" systems. The difference in Turkey is that this problem has never been opened up for discussion.

Consequently, in accordance with the precedent estimations and DigiTurk eventually survived as the winner of the competition between Star Digital, Cine Digital and itself. Its investment potential did sure play a key role in its success. In a crises economy, DigiTurk proved to be the only pay television platform in Turkey that could meet the transition costs of digital television. The evaluation of Murat Küçüksaraç, a high executive of Cine Digital, is worth to see at this point (Sümer, 2003: 92): "DigiTurk is backed by Çukurova Holding. Turkcell, Yapı Kredi and DigiTurk constitute a complete group.... They are trying to create a synergy...."[50] Namely, DigiTurk managed to survive in cooperation with the other companies belonging to same capital group. Today according to data available on its official web site DigiTurk has 1 million subscribers. DigiTurk provides its customers with various channel

[50] The problems within the StarDigital and Cine Digital did also help the rise of DigiTurk. Indeed Star Digital took a remarkable advantage when it won the auction for Turkish Futboll League Television Rights in 2001. But, StarDigital could not make the payments on time. Thereupon Star Digital declared that The Big Marmara Earthquake and following economic crises caused payment problems. Besides, the economic crises it was then proved to be true that the developments within Uzan Group were important factors in that failure. In a few years, as a result of trials against Uzan Family about bank corruptions, many affiliations of Uzan Group including media organizations first revolved to TMSF (Tasarruf Mevduatı Sigorta Fonu- Savings Deposit Insurance Fund) and then sold one by one. As for CineDigital, it also had to freeze, like Stardigital, its investments in digital television. The lack of investment capability seems to be the most important reason of CineDigital's failure. Indeed, Cine 5 as a first and only terrestrial pay television had already got 350000 subscribers and therefore had a great advantage when compared newcomers. If CineDigital had managed to switch its subscribers to digital, this would have provided a great advantage for CineDigital. However, CineDigital could only make only 10000 digital subscribers.

packages with rich interactive value-added services. Eight channel bundles are available on DigiTurk which consists of 68 television channels and 33 radio channels. Besides, DigiTurk offers a variety of interactive services ranging from game-park and digi-shopping to Banking Services.[51]

The success of DigiTurk has led to a growing domestic and international interest towards pay television sector in Turkey. After Çukurova Group which owned the DigiTurk got into economic crisis, Koç Group the biggest capital group in the country, which purchased the DigiTurk put it up for sale. Many national and international corporations sought to buy DigiTurk, including media mogul News Corporation, French Canal Plus, Orbit Communications and Doğan Holding. Doğan Holding and TF1Group were announced to study on partnership in possible acquisition of DigiTurk (SabahGazetesi, 01.28.2005). However, after Koç Group declared that it gave an optional right to Çukurova Group to buy DigiTurk, auction process did automatically freeze. At the end of the time given to Çukurova, Group managed to meet financial requirements and thus DigiTurk began to be a Çukurova venture once again.

One of the most important reasons of intensified interest of international and national corporations to this auction was the broadcast rights of Turkish Football Premiere League owned by DigiTurk to last till 2008. As mentioned above, selling popular sport television rights for long periods is regarded as being a right misused to dominate the area, by EC and national regulatory agencies. Taking into account of the attractiveness of sport events for subscribers, it seems that this important point was ignored by regulatory agencies in Turkey. This situation is, doubtlessly, another factor that is closing the Turkish digital pay television market for newcomers.

Above all, DigiTurk, StarDigital and Cine Digital introduced the digital television to Turkish broadcasting by using the all benefits for digital television technology, and serviced richer-interactive content. In this respect, they become the pioneers of the digital television era we face to after the digitalization process in cable and terrestrial platforms will be completed. However, digitilization on satellite does not only include the pay television operators. Digital

[51] Bundels available on DigiTurk are as follows. Economic, family, sinema, eko-spor, spor, super, mega super, mega gold packages. Economic package is priced at 14. 90 YTL per month, while mega gold is 99. 90 per month. Besides, some of the interactive services on DigiTurk are fee-based such as gamepark. Subscription fee for gamepark is 2, 50 YTL per month. For further information see at www.digiturk.gen.tr

"free-to-air" satellite receivers have become available across the country and the number of channels on satellite has rapidly increased in a few years. Very low prices (150-200 YTL) of the "free-to-air" satellite DTH (Direct-to-Home) systems and the low quality of terresterial television transmission have played the key role in this situation. Indeed, it is proper to avoid confusing the access provided by "free-to-air" satellite receivers with pay television operators. Although, the "free-to-air" satellites provide the viewers with the nearly 100 Turkish channels with high picture and sound quality, these channels consist of "re-transmissions" of national, local, regional terrestrial channels and some satellite-only channels a few of which are thematic channels. There are no packages, and no interactive services.

Although, it can not be estimated officially because of the rapidly growing number of satellite receivers imported illegally, it is thought nearly 20 percent of Turkish television households have digital satellite connection (Please see at Table 5). According to recent researches, there are 90 different receiver and satellite antenna brand available in Turkey, and only six of them are licensed by Telecommunication Authority. Although, it has been also on the agenda to gather all illegal equipments in the market like mobile phones across Turkey, no concrete step seems to have been taken so far (Sabah Gazetesi, 05.05.2005.)

Table 5

Access To Television in Turkey

	2004 households	2004 %	2005 households	2005 %
TV households	11.129.295	97.7	11.614.857	98.6
Cable	1.123.634	10.1	1.294.922	11.2
Terrestrial	9.179.889	82.5	8.990.346	77.4
Digital Satellite	1.074.164	9.2	2.410.407	20.8
DigiTurk	435.111	3.9	447.476	3.9
Other Digital Satellite	589.853	5.3	1.962.911	16.9
Analog Satellite	480.660	4.3	12.214	0,11
Unknown Satellite	99.004	0.9	3.375	0.3

Source: AGB Nielsen

This situation indicates that a chaotic development has been experienced on the satellite television. According to this, to license satellite broadcasters and satellite operators is not the solution, on its own. Undoubtedly, uncontrollable circulation of satellite receivers will have negative-effect over the future plans as to the digitalization of other platforms.

4.2.b Digitalisation of Cable Television

The cable television infrastructure in Turkey began to be built in 1986 by the PTT and remained as a state monopoly till 1997. During this term, despite the fact that executives of regulatory bodies and governments' representatives put assertive targets as to the cable television penetration level of cable television remained very limited. For example, it was targeted to reach at least 2 million households till 1991, but this number proved to be 17.500 (Kejanlıoğlu, 2004). Today, only 1.2 million households subscribes to cable television connection in above 3 million households which have cable television infrastructure.

For the first time in 1997 the cable television sector was opened for private investment. First striking development in cable television after the private cable television operators launched their broadcasts was the rapid expansion of penetration level of cable television across country. The cable television which was available only at 9 cities till 1997, became available 30 cities after private companies completed their infrastructures by 1998. And in 1998, whole networks including 9 big cities which were operated by a monopoly, Türk Telekom Anonim Şirketi (Türk Telekom, the public enterprise) were opened for private companies. As from this date, subscriber number did rapidly increase as well (www.kaider.com).

Despite the rapid development in the infrastructure, cable television is today far away from being at the promised level. The most reason behind the situation is that cable television has never been able to be a powerful alternative to terrestrial television and failed to attract viewers. The main problem has been that many of the channels on cable are also available on terrestrial and satellite for free of charge. Actually, Turk Telecom aimed at increasing the quality of cable television service at the beginning of 2000, and announced that it was to add 14 digital foreign channels to its 45-channel service and after a trial process in big cities channel number to be increased to 90 which was then between 40-50. However, these plans could not be put into practice. As well as economic crises experienced in 2000 and 2001, uncompleted privatization of Turk Telekom has undoubtedly played the key role in this

failure. However, after the privatization of Turk Telekom was concluded in 2005, important developments are being awaited as to the cable television sector in 2006.

Actually, a great part of cable television network in Turkey is already capable of carrying digital transmission and this should be regarded as an important advantage in digital switchover. As a matter of fact, cable television infrastructure, from the very beginning, had been designated as a part of telecommunication infrastructure. Haluk Geray states that the first governmental decision as to the digitalization was related to telecommunication infrastructure and for the first time the decision was taken by Bülent Ulusu government which was established after 1980 Military Intervention in accordance with the 1983-93 Telecommunication Major Plan (Haberleşme Ana Planı). Behind this decision was the *international security and military needs*. Namely, in parallel to international developments, state investment to telecommunication infrastructure rapidly increased. In this context, cable television infrastructure was built suitable for digital communication. Yet, the Primeminister Turgut Özal and his ANAP (Mother Land Party) government to direct the telecommunication investments till 1991, added new reasons for "rebuilding telecommunication infrastructure". According to Haluk Geray, in the process of renewing telecommunication infrastructure, the Özal government chose "an information society" discourse while introducing the new infrastructure. In this respect, while government was introducing the digital telecommunication to the public as "a chance for development and equality between the society", in governmental reports new technology was regarded as primarily as an opportunity for "trade" (Geray, 1994).

In addition to this, it is very important that the major part of the existing infrastructure was built in 1997-98 when the penetration level was expanded by private investments. As a matter of fact, during the whole 1990s the privatization of telecommunication infrastructure was on the political agenda of the country. The governments' discourse in this process was opening this monopoly to "commercial competition and thus to facilitate the investment increase. It is therefore, it was clear that the monopoly on the telecommunication in Turkey would eventually be replaced by commercial competition. Accordingly, in the process of privatization of Turk Telekom the last part of state monopoly on the telecommunication was eliminated. At the same time the cable television services and satellite services was separated before public share amounting to 55% in the company was privatised. Thereupon, the purchase of Turk Telekom by an international company was ratified in 2005. And in

February 2006, an Instruction which indicates a new era for Turkish cable television was put into practice.

With The Directive as to the Cable Television Licenses which was put into effect on 5th February 2006, *all services available on telephone lines* can now be serviced by cable television companies. These services include a variety of services ranging from fast internet to digital pay television services (pay-per-view, interactive value-added services etc.). TK (Telecommunication Authority) has recently granted licenses to the companies[52] which had contributed into building the cable television infrastructure. And cable television companies have recently started to provide internet and telephone services in addition to traditional television services. Yet, it is thought that digital television services will take a year to be serviced. [53]

It is clear that, such a development is perfectly proper to the expectations of cable television companies to invest in to the sector. However, it is also clear that cable television companies are not only seeking for developing new digital pay television services. They are also interested in servicing internet and telephone services. Even so, it is understood that providing new digital television services plays a key role in future projects of cable television operators. Ultra Kablo's, a joint venture of Koç Group which is biggest capital group in Turkey and Doğan Group, top executive Tanju Erkoç, in his speech taking place on a web site verifies such an expectation for the near future of Turkish cable television: "With these licenses expected to be given in short time, the companies like us will be able to make their infrastructure investments in the field and product diversity will be reached. First, the number of channels on cable television will increase and besides *interactive services* will be provided not later than June 2006 on condition that licenses will be given in a short time." Thus, market to grow at least 20%, according to Erkoç, on the basis of providing new fee-based and value-added services.[54]

Consequently, the cable television infrastructure which had been started with the national security concerns was subsequently shaped by commercial concerns. It has been clear that privatization of telecommunication infrastructure has facilitated the growing of cable

[52] Kablonet, UltraKablo, Topaz, İnteraktif and Kablotek, respectively.

[53] For further information see at http://www.netpusulasi.com/index.php?pn=detail&id=716 (Last access in 24 February 2006)

[54] For further information see at http://www.hardwarehaber.com/haberbak.php?id=485

television penetration level. In addition to this, it is observed that increasing investment to the cable television sector will provide "richer" content and new services for cable television. However, the results of the process for public have not been clear. First concrete outlets, as far as it seems, will be the introduction of more pay television services to be available on cable television.

4.2.c Discussion

As it is seen, the rapid digitalization of satellite television beginning from 1999 has led to a rapid development of satellite television in Turkey. Both channel number and the diversification of television services become included in Turkish television market. Both free satellite television and pay satellite television could reach a substantial part of the television households. In this respect, satellite has contributed the expansion and proliferation of outlets and products of the television sector. Besides, a rapid and strong concentration has been experienced in the satellite pay television sector. This developments have clear similarities with the emergence of private broadcasting. In this respect, actions and inactions governments and public authorities have played a key role in this process.

The digitalization of cable television represents a similar process, too. Despite the assertive targets, the process of digitalization of cable television remained freezed until very recently. Yet, as a positive development, a proper step has been taken by separating the cable television services from the privatization of Türk Telekom and licensing of cable television has been separately regulated. However, in order to encourage the investments into cable television, government has chosen relaxing the services to be accessed through the cable television. This decision will undoubtly expand the scope and quality of pay services on cable television.

Consequently, it is observed that digitalization of satellite and cable television are leading to a rapid proliferation of channels and diversification of pay television services. In this respect, it is also seen that this development is contributing to reach a "richer" media environment. And this has contributed to the "commercialization" the television broadcast.

However, it has not still been clear what this process will contribute to the citizenship of our society. In this context, transition to digital terrestrial television has a critical importance in the process of digitalization of Turkish television since the majority of television households

has still got primary connection to terrestrial television. Even if, the licensing process of digital television channels have not been started yet, developments have showed that a similar development will most likely be experienced with the terrestrial television.

4.2.d Transition To Digital Terrestrial Television in Turkey

Most of the European countries have taken a remarkable way in adopting digital terrestrial television, though penetration level has still been insufficient. According to EPRA (European Platform of Regulatory Authorities) 2004 Report transition to digital terrestrial television has already become a European norm which should be completed by 2014-16 in member and candidate countries. In this respect, Turkey which is still at the beginning of planning phase, is in the last group of digital terrestrial television switchover process.[55]

Although, digital terrestrial television had been on the agenda since 1998, the process was accelerated only after the movements appeared in EU concerning to harmonizing member and candidate countries' efforts for converting their terrestrial television system into digital. EC (European Commission) called on member states to set a common deadline for digital switchover in 2005. Besides, some certain amendments in the Directive of Television Without Frontiers as to the regulations in digital television era have long been on the agenda. Therefore, it is clearly observed that the digital terrestrial television has become a European norm. In this context, it is the EU which has been the main motivation for recent concrete decisions taken by the government in 2005 as to the conversion to all analog systems to digital in Turkey. During a television program he attended at Minister Beşir Atalay who is responsible for the media in the ruling party AKP (Justice and Development Party) cabinet, explains the situation as such: "The issue of transition has been considered at length. We have got many researches done. At the summits of European Communication Ministers the issue has several times come to the agenda. And then there we saw a powerful inclination towards digital television exists. European Countries have passed through important phases and they have a variety of common strategies. All of them have put deadlines beginning

[55] Working Group on Digital Terrestrial Television in EPRA Countries, Final Report, June 2nd 2004, Table, According to report, the status of transition to DTT in EPRA countries can be evaluated into three categories. In category 'A' countries, DTT has already been launched and switchover process has already drafted. In category 'B' countries regulatory framework is a very advanced stage. And in category 'C' countries no regulatory framework has been established, yet. Even though, data about the situation in Turkey could not be included by the report, since data were not sent to reporters on time by their Turkish counterparts, Turkey is clearly taking place in the category 'C'.

from big cities. And now we're getting towards European Union...." (Büyüteç, TRT 2 , date 14.02.2006 hour: 20:00).

As a matter of fact, the most important development in the period of 1998 and 2004 was the publish of 'Digital Broadcasting Concept Report' prepared by a group of scholar conducted by Prof. Bülent Çaplı from Communication Faculty of Ankara University in September 2002. Preparation such a concept had been seen as necessary in a HYK (Communication Supreme Council) meeting on July 2000. The purpose of the Concept Report submitted to regulatory agencies is explained as laying down the regulations as to the transition to digital broadcasting in Turkey. The importance of the Concept Report is that it has been the first and only advisory report, so far, on the issue of conversion to digital television in Turkey. The Report analysis the possible regulatory problems to be faced in the switchover problems; and includes possible solutions to these problems.

In this context, first concrete steps were taken in the regular meetings of HYK (Communication Supreme Council), though a detailed plan as to the new road map of switchover process has not been presented so far. However, a new calendar was announced after March and October meetings of HYK (Communication Supreme Council) in 2005. According to this, beginning from big cities (Ankara, İstanbul and İzmir), where frequency was saturated the switchover process would be started and finalized across the country till 2014-16. Till 2006 digital frequency allocation plan and necessary technical procedure would be prepared by TK and submitted to HYK. In the meantime, RTÜK would prepare regulations as to the awarding process and as to the content of television channels in digital era. In this process, periodical frequency usage fees would also be obtained from broadcasters. Then a calendar as to the awarding of digital terrestrial television licenses would be declared. Except these points, there was nothing clear, initially. As a matter of fact, rather than decisions, a variety of choices were being considered and these choices would be re-evaluated according to progression.

Thereupon, the first concrete step was taken in February 2006 and trials of TRT on digital terrestrial broadcasting has got started officially with a ceremony at which governors, bureaucrats and some top executives of broadcaster corporations attended at TRT's Çamlıca transmitter. Later on 3 March 2006, The Directive For Taking Usage Fees from existing analog frequencies was put into effect. According to this regulation, from 2006 onwards, every radio and television channels, regardless of their broadcast licenses, would have to pay

annual fees for the terrestrial frequencies they occupy. Through this regulation it is pursued that 16 year long illegal usage of analog frequencies would be ended. Besides, it was planned to constitute proper conditions for switch to digital terrestrial television after analog frequencies is regulated.

In this process, decisive actors are as follows: HYK, RTÜK, TK and TRT, and TVYD (Television Broadcasters Union) at the side of private broadcasters.[56] HYK meetings are organized by HGM (High Board of Communication) which is a department of Ministry of Transportation. HYK has two regular annual meetings in Marchs and Septembers which are realized with the participation of a responsible minister, RTÜK, TK and TRT executives. The decisions taken in the annual meetings are governmental choices that shapes process. It is therefore HYK take place at the top pyramid at the side of public authorities. The decision taken at HYK meetings are implemented by RTÜK, TK and TRT. TK is responsible for technical plannings. TRT carries out the trial broadcasts and infrastructure conversion of transmitters. As for RTÜK, it is observed that RTÜK's been a key actor in terms of organizing the whole switchover process. RTÜK has been assigned to put a detailed switchover road map including a strategy to allocate resources and a timetable that puts deadlines for certain phases in accordance with the comprehensive decisions taken by the HYK.

As for the other side of the table, it is very critical that the only "civil society organization" which is generally invited to the HYK meetings is TVYD. TVYD is known as an organization of big media holdings. The members of TVYD are consisted of the these biggest media groups national television channels including Kanal D, ATV, Show TV, Star TV, NTV, CNN Turk, TV8, Kanal 7, TGRT, STV, SKY Turk, and DigiTurk pay satellite television platform and some regional and local channels like Ey TV and İzmir TV. TVYD thus seems to represent virtually all big national broadcasters and private media capital in Turkey. TVYD organizes monthly meetings with the participation of member broadcasting organizations' representatives. In these meetings, the decisions as to positioning of member broadcasters before the important developments are discussed. The role TVYD thus reveals itself. The TVYD does clearly pursue to built a cooperation between the biggest media

[56]Minister Beşir Atalay who is responsible with the digital television in ruling AKP (Justice and Development Party) government, had also designated the parties to the negotiations as HYK, TK, RTÜK, TRT, and private broadcasters represented by TVYD, during a television interview (Büyüteç, TRT 2 , date 14.02.2006 hour: 20:00).

groups. In this context, in the passing years TVYD has emerged as an influential pressure group particularly interested in frequency allocations and switch to digital television. As to the switch-over process of digital television, it seems so that under the leadership of Nuri Çolakoğlu, the president of the union, TVYD seems to act as a whole against the government. In this context, Nuri Çolakoğlu appears as the most influential figure at the side of private broadcasters. Nuri Çolakoğlu is at the same time, the biggest media group, Doğan Group's one of members of advisory board. Çolakoğlu's career had begun in TRT in 1967 and continued as a journalist for a long time. He had retured to the TRT, as the consultant of TRT General-Directorate in 1987 for two years. After 1989, he had begun to found private television channels as consultant of private enterprisers. Çolakoğlu has therefore been one of the main figures of private television broadcasting in Turkey, since the inception of private television in Turkey. He is the founder executive of Show TV, one of the first private television channels in Turkey and first news channels NTV and CNNTurk. Çolakoğlu is known as one of the champions of *laissez-faire* approach in Turkish media.

As a consequence, TVYD is regarded by the government as the only representative of the market in the process of switch to digital television. And it natuarally causes strong suspect if the switch to digital television will be evolved in favor of big media holdings.

In this process it is observed that public side of the issue has two interrelated purposes in switchover process. First emphasis is on 'ending de facto situation lasting more than 15 years or so' or in other words 'legitimating existing position of private broadcasters'. The strong emphasis on this stems from the special situation in Turkey. However, the second is a universal emphasis on the benefit of digital television: Technical superiority of digital television transmission.

For example, former president of RTÜK Fatih Karaca during an interview after the decision of March 2005 HYK[57] meeting, asserted that in spite of the fact that broadcasters had cable and satellite licenses, they did not have their terrestrial licenses. Karaca told that switch to digital terrestrial television would give them a chance to take terrestrial television field under

[57] First concrete step taken after HYK March meeting was decision of giving persmission to these broadcasters in cities in which any application submitted to RTÜK in 1995 for television broadcast, in accordance with the decision of switching to digital television. In comply with the provisional article 6 in the law of 3984, it was also decided that new frequencies allocated to new broadcasters would not mean a vested/acquired right.

control. It was therefore nothing would be same after terrestrial broadcasters would be licensed and forced to pay fee in return of using frequencies, according to Karaca. However, he also added that any calendar as to the switch-over process had not emerged, yet (Aksiyon, 25.04.2005). The statements of Minister Beşir Atalay underline similar purposes. In his speeches he always stresses same points: According to Atalay digital television does primarily refer to better picture and sound quality as well as end of spectrum scarcity and interference problem and low operating costs. More scarcely he stresses the implications of digital television as regards to television broadcasting: How to realize interactivity.

The Instruction of Annual Frequency Usage Fee (Yıllık Geçici Kullanım Bedeli Uygulaması) put into effect on 3 March 2006 by RTÜK is a good expression of these two justifications as a first sound step in the new road map. As Zahid Akman, RTÜK president, states, from now on 1500 some broadcasters in Turkey will have to pay for the frequencies they have occupied for more than 15 years. The purposes are put as follows:

1. This is regarded as an important step taken in favor of regulating the broadcasting field.
2. Through this regulation, for the first time, scarce public resource frequencies are thought to be a source of revenue for state budget.[58]
3. Transmitters which have negative influence over the flight security are planned to be standardized so that uncontrolled signals will be avoided. Besides transmitters production equipments are planned to be standardized and compatible in comply with the existing laws. [59]
4. Thus, sound and picture quality of broadcasts will rise and be compatible.
5. As a result, in an environment standardized by means of getting channels/frequency fees, proper conditions necessary to start digital terrestrial broadcasting will have been provided.

[58] In his speech during the meeting held for announcing new regulation on 02.03.2006, Zahid Akman told that according to existing notices approximately 40 million YTL revenue would be got from the frequency fees.

[59] During our interview, Veysel Cünedioğlu, an executive of TRT Transmitters Department, points out an important rationale behind the decision of equipment standardization. Cünedioğlu asserts that all broadcasters especially local ones (except TRT and other public broadcasters) have many equipments out of standards which are causing enterference problem and avoiding taxation due to the fact that these equipments do not take place in notifications properly. So standardization 'registering' is most likely pursued.

On the other hand, it is observed that privileges of private broadcasters in the process of transition to digital television seem so different from the governmental purposes. During the "Digital Television Panel" organized by RTÜK on May 2006, Nuri Çolakoğlu in his presentation, demands comprehensive changes in RTÜK law under the title of "New Opportunities of Digital Television" as follows:

- Re-regulation in the Law of RTÜK: Eliminating broadcasting obligations stemming from various laws
- Reducing the RTÜK share paid by private broadcasters.
- Eliminating the obligation of covering 70% of the country to be a national broadcaster
- Eliminating the rule that gives the one-fourth of the frequency capacity to TRT
- Eliminating the rules that put limits on the advertising replacement on television
- Ratifying the rights of private broadcasters who have kept broadcasting for 15 years.

As is seen, private broadcasters have important expectations from the process. In comparison to this, private broadcasters are reluctant in taking initiative for meeting the cost of switch to digital television. Rather, they expect government to meet the cost and to facilitate their commercial interests in return of their facilitating the switch to digital television.

4.2.e Issues At Stake

4.2.e.1 Modifying The Terrestrial Transmitters

In the process, converting analog transmitters into digital transmitters across country is an important point. Due to the fact that private broadcasting in Turkey was launched without any technical plan, most of the transmitters out of TRT's transmitters have not been registered for a long time. Besides, these transmitters are not standardized and causing interference problems. It is therefore, analog frequency allocation has first required the registration of all these transmitters. The implementation of Annual Frequency Fee put into practice in March 2006 seems to have solved this problem, at last. As RTÜK president Zahid Akman states the necessary information has been obtained from the municipalities and broadcasters themselves and thus the problem was solved.

In coming months, the crucial problem is how to organize the conversion of transmitters. Because digital broadcasting technology makes it possible to carry more than one channel over a single transmitter. For example, according to the study conducted by TK and RTÜK it

was seen that in the big cities where frequency conservation is a big problem a few transmitters will be sufficient to carry all channels – only two main transmitters for İstanbul and Ankara city centres will be sufficient. It is therefore, operating and converting these common transmitters emerges as a problem. As a matter of fact, the Law of 4756 which made amendments in 3984 clearly assigns TRT to establish and operate (by establishing a company) terrestrial television transmitters. However, during our interview Taha Yücel asserted that it would be on the agenda to establish a company jointly with private broadcasters. During the "Digital Television Panel" organized by RTÜK on May 2006, Nuri Çolakoğlu in his presentation, argued that TRT had to establish a transmitter company with the name of "ANTEN A.Ş." jointly with private broadcasters, in accordance with the statements of Taha Yücel. However, Çolakoğlu argued that this company had to be shared as follows: 70% for national broadcasters most of which are controlled by media holdings, 20% for TRT and 10% for regional and local channels. Moreover, according to Çolakoğlu, this company has to be operated by TRT infrastructure and TRT has to make technical contributions. In other words, major part of the cost of conversion has to be met with public assets. It has still not certain how this proposal will be concerned by political power, but as pointed out by the Concept Report prepared in 2002, converting all transmitters may amount nearly 200-250 million dollars. And according to report, TRT's incapability of meeting the financial requirements of transforming transmitting infrastructure has to be considered and a common vision with private broadcasters has to be developed in terms of meeting financial requirements of transition. Nevertheless, neither judicial basis, nor the content of the company has been apparent so far.

4.2.e.2 Trial Broadcasts

Since, the channel abundance, especially in big cities, in the frequency interval allocated to television broadcasts in Turkey, it is a problem to find any empty space to start the trial broadcasts of digital television. Thereupon, HYK assigned the TRT to solve this problem in 2004 to accelerate the digital terrestrial television. Thereupon, In January 2004 DVB-T trial broadcasts officially started by TRT. Since 2003, trial broadcasts had already been realized on Ankara-Dikmen transmitter by TRT, indeed. Moreover, in September 2005 a low-power transmitter were transformed DVB-T transmitter for trials. Besides two other transmitters in Istanbul have started digital trial broadcasts. At the same time immobile and mobile receivers have been tested. It is decided in 2005, new transmitters to be founded between 2003-2005 would be modificated to digital tranmitting. Besides, TRT managed to find an

empty place for trials through shutting down TRT-5 (TRT Int) broadcasters which is not already an obligation to broadcast for domestic viewers. It is also planned that private broadcasters will be trial broadcasts on these TRT transmitters.

However, these trial broadcasts are subject to a certain amount of financial and infrastructure cost. Public authorities seem to have taken on the burden of this cost without any discussion or negotiation with the private broadcasters. Moreover, as Nuri Çolakoğlu states in his column in Referans Newspaper, Ministry of Transportation meets the cost of trial broadcasts and coordination with the private broadcasters.

4.2.e.3 Frequency Allocation

It seems so that the issue of allocating terrestrial frequencies for digital television will be an important point of controversy as has been in the analog television process. Even if the problem can be traced back to the advent of de facto launch of private broadcasting, it was originally related to the establishment of RTÜK. RTÜK was established in 1994 and assigned with a very important duty of making frequency allocations through an awarding. Thereupon, a frequency allocation plan was prepared together with Bilkent University and it was declared that frequencies would be awarded soon. Yet, due to varied objections, award process had to be delayed till 1997. Awarding process was started again on 30th September 1997 and many local broadcasters participated. Yet, this time, a "security document" was required by Prime Ministry (on an advice decision taken by National Security Council) for each broadcaster. Thereupon, RTÜK cancelled the bidding process and any broadcaster was given "security document" for two years. Then, it was announced that tenders would be accepted again in 2001. In an announcement made by RTÜK, it was said that new awarding of national television frequencies would be for only 11 national channels which had applied in 1995 since the channels at the end of UHF band would be left free for future arrangements for digital television. Yet, this decision was then taken to the court by broadcasters and cancelled. Any further progress was recorded as to the issue afterwards. In such a context digital terrestrial television came to the agenda.

An important step as to the issue was taken at the regular meeting of HYK on March 2005. It was decided to discard analog frequency plan. Instead, digital frequencies would be directly allocated. According to first announcements made by Beşir Atalay and RTÜK's then President Fatih Karaca, bids for the digital frequencies would be accepted soon. Especially,

after awarding process for Uzan's television and radio corporations was completed in September 2005, Beşir Atalay delivered assertive speeches to the press about the possible auctions of digital terrestrial television licenses. For example, during an interview on the future of broadcasting in Turkey, Beşir Atalay said that "that the radio and television stations had been paid so much money made me think that it was our turn to make money from this business" (Sabah Gazetesi, 26.09.2005). In this context Atalay argued that 'frequency award' would be a condition in coming days.

As a matter of fact, in Article 24 of The Act of 3984, Law on the Establishment of Radio and Television Enterprises and Their Broadcast, about the Responsibility of Telecommunication Authority makes it clear that *tender* for licenses of frequencies is a legal obligation:

> National, regional and local frequencies and channels shall be allocated with free of charge to the radios and televisions of the Turkish Radio and Television Corporation, Meteorology Radio broadcasting under the structure of General Directorate of Meteorological Affairs, Police Radio broadcasting under the structure of General Directorate of Security and local frequencies and channels shall be allocated with free of charge to the Communications Faculties which have radio and television departments. The Supreme Council shall tender the remaining television channels and radio frequencies for the usage of private enterprises under a certain plan. The Communication High Council shall determine to what extent and according to which schedule radio and television frequencies are tendered and shall notify the Supreme Council for the tender within this framework.[60]

However, with another amendment put into effect in 2002 the statement of "television and radio frequency annual allocation fees from private radio and television enterprises" had taken place in the article 12 of Financial Resources and The Budget[61]. It was therefore possible to conclude that, The Law had already given a right to Supreme Council to establish the preconditions as to frequencies allocations and license fees to be paid by operators of radio and television stations before the amendments.

In the second meeting held on 7 October 2005, HYK preferred the second choice in favor of not doing a cash bid award for frequencies. Thus, it was declared that through an instruction to establish the preconditions for periodical license fees to be paid by private broadcasters,

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[60] Responsibility of the Telecommunication Authority
Article 24. (As amended by the Law No. 4756 on May 21, 2002.)

[61] Financial Resources and the Budget
Article 12. (As amended by the Law No. 4756 on May 21, 2002.)

the problem of tender for frequencies would be ended. In fact, the statement of 'periodical license fee' had taken place in The Concept Report submitted to RTÜK in 2002. However, The Report had stated that "rent fees" would be in effect till the tender for digital frequencies. The Report had argued that tender for digital frequencies had to be realized, absolutely.

As a matter of fact, what can shed light on the reason behind the decision is the annual meeting of TVYD in 2004 which preceded the HYK's October 2005 meeting. Besides TVYD members, HYK, TK and RTÜK executives had also attended this meeting. In this meeting ideas as to the transition to digital television were exchanged. Of the advisory decisions taken in this meeting one seems to be very important at this phase: "Article 4C) It should not be ignored that switch to digital broadcasting will bring additional costs for broadcasters, platform operators and consumers. Hence, excessive taxing should be avoided. For instance, digital frequencies may be exploited free of charge for some time and in return of allocating analog frequencies for *periodical license fees*[62] paid, *RTÜK advertising share of %10. 5 may be dropped to %5*".[63]

As a result, quite the contrary to the assertive speeches of Minister Beşir Atalay between the March and October Meetings, it was decided that instead of a tender for frequencies periodical license fees would be paid by broadcasters in return of getting privileges for digital frequencies.

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[62] Stressed by myself.

[63] Other important articles of the advisory decisions are as follows:
In İstanbul, above all:

1. Analysis of cost/profit should immediately be conducted.
2. A road map of switching process prepared by a committee to involve all actors of the sector has to be established.
3. It should be planned how to exploit frequency channels to be free after digital swithcover process completed.
4. Proper regulations and laws including following topics should be prepared.
a)Providing legal basis for those broadcasters who wants to be pioneer in digital broadcasting.
b)To prefer a regulatory perspective instead of a restrictive perpective
c) above
d) Changing the article of the law that gives the right of transmitter operator to TRT and turn the article into a form open to competition.
e) Taking into account the opportunities of DVB-T technology, supporting a switch by means of using interval channels instead of 61-69 channels which have already full.
f) Removing the frequencies from the broadcasters who do not pay frequency fees in six months and supporting the DVB-T the switch to DVB-T over these channels to be freed up.
(EMO Dergi, number 425) Available from: http://dergi.emo.org.tr/altindex.php?sayi=425&yazi=368

RTÜK's member Taha Yücel explains the reasons behind this decision during our interview as such:

> There has been a process lasting 12 years since 1993. Namely, these broadcasts have been on air in one way or another. They have been subject to some regulations and sanctions. They have been made payments amounting to 10.5% of their advertising revenue. They also have their satellite and cable licenses. That is to say they have licenses actually, but they don't have terrestrial frequency licenses. What should we do on that condition? It would not be a solution if we accepted bids for analog frequency allocations. I think allocating analog frequencies will most probably stop the transition to digital television for at least five years.

Today, a compromise seems to have been reached with the implementation of annual fee. According to a very recent declaration of Zahid Akman which supports this idea, RTÜK could get 38,5 million YTL (new Turkish Liras) revenue from this implementation. More importantly, RTÜK can, for the first time, reach a true information about the number and power of transmitters across the country which is of utmost importance in the plannings of digital terrestrial frequency map. Moreover, neither national broadcasters nor local or regional broadcasters seem to have dissatisfied with the implementation.

However, this yearning compromise seems to be an ephemeral solution to the controversies. Because, this implementation made the use of frequencies legal and this situation can be interpreted as "acquired rights" for the distribution of digital frequencies. Explanations of the RTÜK executive, Taha Yücel supports this opinion. Taha Yücel, during our interview, argued that it is an obligation to take frequency fees. He continues as such:

> That is to say, broadcasters who have occupied frequencies, state's scarce public resources, have to pay fees in return of their usage of these frequencies: Annual usage fees. We are preparing regulations concerning the issue. And as a result, without needing a broad scale of awarding process and thus avoiding a mess, regulation of the field would be realized. Otherwise, an auction would result in serious drops in the number of broadcasters and that would be unjust to viewers who have got accustomed to reach diversity. And if we can switch to digital television without damaging such a television environment including many channels, it will have been a proper transition to us.

As a matter of fact, for the first time, the implementation of "annual fee" came to the agenda, in the context of switching to digital television in the Concept Report prepared in 2002. The Report proposes a *road map* for the switchover process in Turkey. The Concept Report points out that since it is almost impossible to find any empty channel on frequencies allocated to television and FM radio broadcast in big cities, *analog frequency plan* does have no longer any use and a *new digital frequency plan* is needed in the short term. It is asserted that since the digital switchover has just appeared as an obligation in near future analog

frequency allocation will be ephemeral. In this context, the Report suggested a 'transitory regime' imposing a certain amount of rent fee on existing broadcasters without awarding licenses in 2003. Thus, plan estimates that broadcasters would have to free some transmitters they do not use not to pay more money. Thus, some channels necessary to began digital switchover and trial broadcasts would be freed up. After some channels freed up, TRT would begin trials and by 2005 private broadcasters also would become digital broadcasts. Meanwhile, digital frequency awarding process initialized for national and local broadcasters separately. According to plan, getting annual fees for licenses would not constitute *acquired rights* for digital frequency allocation. In other words, analog private broadcasters' paying rent fees in "transitory regime" would not have acquired rights for digital frequency awarding. However, the existing situation indicates the quite opposite of the proposed one.

4.2.e.4 The Issue of Tax

In this process, as mentioned at the annual meeting of TVYD in 2004, the private broadcasters demand extra implementations in addition to TRT's infrastructure support such as reductions in the tax they have paid. Çolakoğlu always argues that that TV broadcasting in Turkey is the only sector which is taxed according to alcohol, cigarette and fuel oil, prevents foreign investment to Turkish broadcast sector. Accordingly, Çolakoğlu asserts that private broadcasters in Turkey already pay high taxes to government. The share of 10.5% getting from the gross advertising revenues constitutes the major part of payments and when other taxes are added to this total number makes very high cost (approximately 800 million dolar), resumes Çolakoğlu. Thus even though broadcasters have gotten licenses for frequencies and, they have already made their contribution to the economy as much as they have to (ReferansGazetesi, 12.10.2005).

Today, broadcasters are obliged to pay 10,5%, of their total advertising revenue as the tax whereas the had to pay 4% of total advertising revenue till 1997. This tax consists of 5% contribution to national education, 5% RTÜK share and 0,5% administrative expenditure. Radical increase in the taxes broadcasters have to pay naturally led to a dissatisfaction among both national and regional-local broadcasters. Taking 10.5% gross revenue of advertising does not seem fair to them, instead they prefer stable payments like 'rents for frequencies' in return of frequencies, and they demand decreases in taxes. According to the data of RATEM (Radyo ve Televizyon Yayıncıları Meslek Birliği), another civil society organization mostly consisted of regional and local broadcasters, declared that between the

period 2000-2002 nearly 200 locar and regional radio and television station had to be shutdown because of the high taxes and economic crises. Therefore RATEM proposes to reduce the percentage of the taxes from 10% to 2% percent (www.ratem.org).

This demand was also explicitly communicated to government on a meeting between TVYD and RTÜK's new executive board on 2nd Augustus 2005. In this meeting which had originally been first meeting between the groups, commercial broadcasters presented a demand list to the RTÜK. And 'carrying out the allocations of broadcast licenses as soon as possible' was at the top of the list. Naturally, paralel to this 'decreasing RTÜK's share in gross advertising revenue' were also in the list (ReferansGazetesi, 03.08.2005).

He argues that these special taxes taken from private broadcasters will eventually abolished in the process of EU fullmembership. Therefore, it would be better to abolish these taxes at once. And the digital broadcasting is a chance for this.

4.2.e.5 Viewer's Adoption of New Equipment

Viewer's adoption of new equipment is another point of controversy as a part of "chiken-and-egg" dilemma. However, it has still been very uncertain how to meet the cost of infrastructure conversion. Even so, there exists emerging a powerful inclination that the state will take on the burden of switch. It is a fact that private broadcasters are reluctant to take initiative in promoting the digital television before the people and want government side to guarantee the success of penetration level in terms of receivers.

In this context, undoubtedly, persuading the users to buy additional equipments will require a much more well-planned organization. However, it is observed that the consumer-user adoption capability which is an indispensable part of 'chicken-and-egg' dilemma, in other words demand of the market is presumed to be properly organized in this process. Nonetheless, there emerge some points to be considered. First problem is related to impose common standard for set-top-boxes. Second problem is related to marketing new equipments at modest costs. If these issues are to be left to the market conditions, "viewer/consumer" may face irreparable losses due to the lack of organization and planning. Because, disorganization may cause that incompatible set-top-boxes with very different prices will be introduced in the market. And as it was seen in America, this may result in consumers' losses and failure in accelerating the switch process.

As a matter of fact, not thinking about the technical standards of 'digital services and equipments' is a sign of how digital television is perceived by public authorities. Moreover, receiver equipment producers have still been following the developments, instead of being directly participated to the process. Interpreting the transition decision, Beko's Digital Product Design Department President Çoşkun Şahin, as an answer to our question, asserts that the decision is at least beneficial for reducing the uncertainities. He resumes as such: "Since Beko (and other Turkish producers) has already been concentrating on export oriented digital product design, the decision of switching to digital is at least supportive." National consumer electronic producers, such as Vestel, Beko, Profilo, *have already been leader* in European context in digital television and equipments sector. However, according to Şahin there lies an important problem before them too:

> Our national producer companies keep the major part of European Market. Nevertheless, we are not active in determining the technological standards. What we attach importance is as following: Standards of transmission was formed so long before that we can not do anything to change it. Yet, there is no standardization of interactive service technologies and Turkey has to form its special standards. Unfortunately, TRT ignores the subject as it is concentration on *transmission*. The most important part of the issue we are interested is that of content forming and interactivity. If the standards as to interactive standards are not properly laid down, consumers will probably have to change their receivers for at least one or two times.

In this context, during our interview, Taha Yücel, states that an English company Switchco like company which is also assigned to organize technological standards, may be established by a consortium involving private broadcasters:

> A company named as Switchco founded in England. Swithco is now marketing and introducing the digital televison to English people. Democratically, public is told that switch to digital television has many benefits. There is no restriction. We have to apply same method in Turkey. We will have market researches done in big cities, İzmir, İstanbul...Advertisings will be made about this and maybe subsidy will be imposed. And at last let's say 70 or 80 % of penetration is reached, then the subsidy or promotions may come to agenda for the rest. And maybe, cost of the subsidy is met by broadcasters.

Yet, as Nuri Çolakoğlu asserts, private broadcasters want to leave the responsibility to persuade "consumers" to government. However, any point is clear as to the issue. Furthermore, so far, as it has been seen, public speeches delivered by the minister Beşir Atalay and regulator authorities' executives have caused even some misperceptions[64].

[64] Very recently, satellite dish producers union (TUYAD- Tüm Uydu Anten Elektronik İletişim İnsanları Derneği) has made a public announcement on Newspapers. In the announcement it is argued that speeches delivered by executives as to the digital television is misdirecting the people, claiming

In this context, there also a smooth consensus between private broadcasters and governments is presumed. Taking into the harsh competition between media groups in Turkey it can be argued that in following phases of digital switchover clash between private broadcasters and between private broadcasters and governments seem so possible. An example available in Concept Report of 2002 is very valuable at this point. According to concept report private broadcasters are worrying about what will happen if penetration proves to be slow than expected and in that case some broadcasters who progress slower than promised take this advantage. This can be regarded as distrust between broadcasters.

However, Nuri Çolakoğlu, during our interview, asserts that complying with the decisions and deadline is the easiest side of the issue. He resumes, "There will be no problem in part of private broadcasters as soon as government ensures that the digital set-top-boxes (receivers) will be ready. Private broadcasters are now well-organized between themselves in respect to digital television. But, there has still been an important concern of how to sell millions of set-top-boxes to simple users."

In comparison to this, the statements of Serdar Akinan, chief editor of Sky Turk, a top executive of Çukuova Media Group, during our interview shows that a smooth cooperation between private broadcasters is not that easy:

> Private broadcasters within themselves seem to have reached a compromise about digital television. They act as if they are doing their best in switching to digital terrestrial. But, I am not sure if that would happen according to road map put by government. Such a vision does not exist for the private broadcasters....Nuri Çolakoğlu is a very important name in this process, however, he have to make his duty after putting his some hats off.

4.2.e.6 How to Use New Capacity

In addition to reduction in tax payments, some other new expectations are taking place in the list of private broadcasters such as 'making necessary regulations as to the interactive

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that thanks to digital terrestrial television cable and satellite television will no longer be needed. In this context, according to announcement sales in satellite dishes and receivers has dropped dramatically. Actually, as stated in announcement digital terrestrial television is not an alternative of satellite and cable television. Government and RTÜK may have plans for reducing the uncontrolled proliferation of satellite dishes most of which exported illegaly. But, it seems impossible for many to reduce the number of satellite receivers and dishes purchased by many people at slightly high costs while the real number of satellite receivers can't even be estimated (Milliyet, 22 February 2006, p.25).

television services'. Besides, whether there will be new channels to be licensed is another part of the question of how to use new capacity.

In this context, the approach of the administration is very important since the use extra frequencies have not been subject to detailed plans. For Taha Yücel, one of the functions of digitalisation is to get some extra frequencies to be allocated for other developing services such as DVB-H.[65] However, Yücel resumes that, by switching to digital broadcasting, it is meant, at the time of being, ending the existing situation and switching existing terrestrial broadcasters to digital first: "After we shut down the analog, we may allow new entrants to terrestrial in new channels to be freed up. But first, we have to collapse the shanties down and replace these shanties with apartments and then consider the applications under certain conditions."

As is seen, regulatory authorities and government seem to take the decision about new capacity according to progression. However, issue requires urgent decisions before the awarding process for digital license begins. Serdar Akinan, an executive of Çukurova Group, indicates the urgency of the problem: "There are a lot of new channels established after 2000 and they all naturally want to be broadcasting on air if it is possible. In the process of switching to digital television it is an important question how to give place to these new entrants which are already on satellite."

Even though, regulatory agencies seem to be eager to discuss the issue later, private broadcasters inclination about the use of new frequency is being publicized by Nuri Çolakoğlu. According to him, beginning from big city centers every 6-7 channel to be freed up will provide 25-30 digital-channel capacity. And this will provide an opportunity to carry 14-16 channels which had applied to RTÜK till 28 April 1995 and 4 TRT channel. In addition to these channels, it will also be possible to make local channels included into this bundle. Shortly, there will be a bundle consisting of 21-26 channels and anybody who wants to get access to this bundle can get the set-top-boxes with paying extra 50-60 YTL. In that case, the other analog channels to be freed up may be allocated to digital terrestrial television

[65] DVBH is an application for 3G mobile audio-visual services. As expressed above allotting frequencies to be obtained after digital television frequency allocations has been one of the most important topics as to the discussions of digital terrestrial television in developing process in Western Countries. Nevertheless, it does not seem to have been subject to detailed regulatory works in Turkey so far. Taking into account that Telsim has been bought by Vodafone, the world leader in developing 3G sector, it can be said that in transition process of Turkey the question how to use extra channels will be raised to the agenda.

broadcasting. Thus, it will be possible to make most proper regulation from the beginning. For example, in this case, according to Çolakoğlu, ten channels can be allocated to *thematic channels*, while ten other channels are to be allocated for *pay television services* (Referans Gazetesi, 08.03.2006). As is understood, the first aim of the private broadcasters is to ensure their position and then to introduce new channels and pay services to the terrestrial television platform. Even though, the reaction of government and public authorities has not been certain so far, an inclination in favor of media holdings will likely emerge.

However, an important problem seems to have reached a solution in the process of digital television. This problem was about how to divide limited frequencies between regional, local and national televisions. This question kept busy the experts of TK and RTÜK for a long time. In the process of preparing analog frequency allocation the question remained virtually unsolved. Yet, today it is understood that existing local and regional television broadcasters will have rights for the digital terrestrial television as much as national broadcasters, after paying transitory license fees. As a matter of fact, it has been an expected result of digital television since digital transmission will create proper spectrum up to 40 channels.

4.3 Discussion

Kaya and Alemdar (1994:45) asserted that private television was regarded as a natural concomitant of the developments taking place in Western Countries, and therefore was introduced without having been subjected to broad public discussion and scrutiny. Today, similar conclusions can be inferred for digital television. Digital television is being regarded as a global norm and technical superiorities of digital television are oftenly emphasized by the supporters of the process. However, it is being ignored by the authorities that transition to digital television requires a detailed plan and arrangement. Many crucial decisions are being left to the process. Because, it is seen that the primary interest of the public authorities and government is to legalize the existing situation of terrestrial broadcasters. On the other hand, expectations of private broadcasters become concrete concerning to digital television. In this respect, it is seen that commercial concerns have played a key role.

Consequently, it is understood that switch to digital television will create a judicial basis for legitimating the existing situation of broadcasters. Besides, it is also seen that new channels, thematic or pay, and new services will most likely be involved in the terrestrial television, as has been in cable and satellite platforms. Yet, it is not clear that what this process is bringing

about for “public service broadcasting”. Actually, this dimension of digital television has not been subject to scrutiny of public authorities as much as technical plan of the switch, yet.

Besides, transition to digital television needs a detailed organization that may have repercussions for the whole society. In this respect, the pragmatism and shallowness of approach of government and public authorities are evident. In this context, rather than decisions and calculations, possibilities and expectations are valid for the existing plan of switchover. Above all, the calendar put by the HYK seems very unrealistic. According to plan, it is foreseen that analog broadcasting transmission will have been shut down in 8 years, between the periods of 2006-2014. The road map according to existing version is 7 years shorter than the Concept Report submitted to RTÜK in 2002. Concept Report starts the switchover process from 2003 and foresees the 2015 as the year penetration level reaches at 70%, and put 2018 as the switch-off date. Furthermore, taking into account wrong predictions about the market reactions to the transition process there might be important delays to require comprehensive revisions in the plan. Many countries including USA and England in industrialized countries the digital switchover process had been foreseen to be completed by 2006, but this deadline has recently been changed in USA as 2009-2010 and in England as 2012. This version of road map of Turkey, therefore, seems so assertive and will most likely need revisions in near future.

Under these conditions, regulations and plans prepared by government and regulatory agencies are short-termed and full of uncertainities. Furthermore, taking into account of Kejanoğlu’s findings about the character of making communication policy in Turkey, the picture become more blurred. According to Kejanlıoğlu four important basic characters of broadcasting policies in Turkey are as follows: First, broadcasting policies have not been subject to long-term or even short-term planning. Secondly, even when broadcasting was subject to planning, the plans were not carried out. Thirdly, broadcasting policy usually occurred after the fact-several changes and innovations having been introduced de facto. And lastly, broadcasting policies were usually made by the military as reactions to the perceived threat to national security, or, in case of TRT’s policies, as an attempt at manipulation. What was missing in these policies was the public. “The ‘public’ as a body of ‘citizens’ and as a part of the policy-making process is nonexistent, its representatives serving to only ‘legitimate the ruling group’”: Excluding audience... (Kejanlıoğlu: 2001)

CHAPTER 5

CONCLUSION

This dissertation is an effort to understand and explain "the adoption process of digital television in Turkey". In this context, the governmental reasons of replacing analog television systems with digital television systems and the commercial and administrative motivations that gives shape to this transition process are tried to be understood. And how this process has been organized and possible concomitants for the future broadcasting are also tried to be unveiled.

With this purpose, the second chapter discussed the possible impacts of switch to digital television over broadcasting systems and broadcasting itself as an organized communication process. As was as seen in this chapter, digital television had important advantages over its analog counterpart. The champions of the process are claiming that digital television will be beneficial for the society with its emphasized technical superiorities. In this context, digital television which had originally been shaped by international commercial competition thus became a part of the political rhetoric of "information society". However, as was seen in this chapter what was primarily at stake as to the adoption of digital television has been vested interests of private broadcasters. Accordingly, 'interactivity' of digital television has primarily been realized as new digital television services or as 'marketing' traditional television content in new 'bundles'. In this respect, it is natural that digital television was first realized by pay satellite operators. The commercial interest concerning to digital television thus reveals itself at this point. It is most probably that the competition in digital television era will be based on more and more diversified content and services converged with the other sectors of communication and information. In paralel to this, at the core of of the governments' interest as to the digital television lies this more integrated information and communication based economy, anyway.

In the third and fourth chapters the transition to digital television was dealt with in USA, Britain and Turkish contexts. In addition to the common issues explained in the third chapter, the pecularities of the countries were emphasized in these chapters. In this respect, the interrelated developments as to the digitalisation of satellite, cable and terrestrial television platforms were examined, respectively. Particularly, the switch to digital

terrestrial television was examined in a more detailed way. The most important issues at stake and the positions of governments and the private broadcasters were tried to be unveiled in this context. As such, the important common points which appeared in the U.S. and Britain contexts as follows: First of all, governments adopted a pure "market-driven" process as to the digitalisation of cable and satellite television platforms. Digital television was first realized by pay satellite platforms and regulatory authorities did not intervene in virtually anything in the process of digitalisation of satellite platforms with the only exception of transmission standards. Especially, the problem of whether CAS (Conditional Access System), the systems organizing the access of viewers/users, would be 'open' or 'closed' systems was solved in favor of pay television platforms. In this sector of pay television, standards and competition were totaly left to the 'market' itself. Consequently, a few platforms that could meet the high costs of digitalisation displayed a rapid growth in the sector and became monopols in the national markets. Besides, with the digitalisation the share of satellite television in comparison to cable and terrestrial platforms also displayed a rapid and sharp growth in national markets.

That the satellite platform's share increased in the market did immediately stimulated the cable television operators for improving digital television services, too. The competition between cable and satellite platforms based on new digital services have still been new for the national contexts. It is therefore not easy to estimate the result of this competition. However, the fact that cable television can provide many more channels and fast interactive services with a huge "broad band" capacity is thought to be an advantage of cable television in comparison to other platforms.

As for the conversion of terrestrial television infrastructure, the conversion into digital seemed to be more problematic than the digitalisation of other platforms. The main reason behind the controversy is that the whole system of terrestrial television was based on analog technology. In this system, only a few broadcasters got licensed in return of obeying public interest/service rules. In other words, these broadcasters enjoyed the right of using "scarce" frequencies and high advertising shares in return of obeying the "content and access regulations" aiming at providing a "quality" service to the citizens of a democratic nation, at least theoretically. Besides, terrestrial television infrastructures of the nations are very diffused accross the countries. On the other hand, completion of swicth to digital terrestrial television has importance for the re-use of "scarce" spectrum resources in the digital communication era. It is therefore, how to organize the switch to digital terrestrial television

has appeared as a significant public policy problem. In this context, one of the most important issues at stake has been to meet the cost of switchover process. As was seen in the national contexts scrutinized above governments provided the terrestrial broadcasters who were not eager for the switch to digital television with new advantages in order to 'accelerate' the switchover process. Among the advantages, the most important one was to regulate the use of spectrum allocated to channels in a way not specifically limiting the new digital interactive services in order to encourge broadcasters to invest in the digital television. Morever, as was seen in the Britain's case, the public service broadcaster itself has had profound contributions in developing new pay digital services. Concsequently, for the governments the most important issue at stake concerning to digital terrestrial television proved to be to organize the new terrestrial television system suitable for digitalized communication market. In this process, it was observed that the principles of public interest/service were not included in the disscussions of digitalisation of terrestrial television.

In this context, it is evident that *commercial* motivations are determinant factors in the process of digitalisation of television systems. In this respect, it is necessary to put a *reserve* for the expectations from digital television. The main argument of this thesis can be put as follows: *Digital television can be regarded as a newness in terms of switching to "rich media" with more channel capacity and new services from "poor media" with less channel capacity and limited range of services; yet, apart from this digital television does not represent any profound advancement.* In other words, it is the commercial potential of digital television which is the main reason that led to the replacement of analog television with digital television systems at this term of history. Digital television provides the viewers as consumers with the access of many more products and outlets of media organizations. However, it is not clear that what advantage or newness digital television will bring for those who do not have money. In this respect, it is also not clear what digital television provides for the citizens of a democratic society. At this point, the champions of the process are emphasizing the technical superiorities of the digital television in order to legitimate the adoption of digital television. Consequently, the replacement of analog television with digital television can be regarded as a new *breath* in the process of adopting new communication technologies for social use in the context of deregulation.

In this context, it is easy to point out similar issues in the process of adoption of digital television in Turkey. First of all, the social use of digital television was first realized by pay satellite television operators in Turkey. Moreover, in the pay satellite television market, a

rapid consolidation was experienced. And there has been a consensus on the 'closed' access systems in favor of platform operators. In paralel to developments in pay satellite television sector, new Instruction as to the licenses of cable television operators has defined a broader television service content for the cable operators. In this context, in addition to internet and telecommunication services, new television services and re-packaged traditional television content is planned to provide customer/viewers on digital cable television. Consequently, it is evident that digital television will probably increase the share of pay television services and more importantly will legimate the pay television services in Turkish context.

However, it is hard to argue that switch to digital television in Turkey has progressed in the context of certain political frame. This situation can be best summarized in the context of switch to digital terrestrial television. The concrete steps as to the issue could be taken only after 2004 and first implementations could be realized in 2005. The main motivation behind this late movement has obviously been European Union. Yet, it is not true to argue that switch to digital terrestrial television has been subject to detailed plans. The main problem is how to meet the cost of transition and how to reregulate the digital television environment: In this context, it is observed that the main issues at stake are modifying the terrestrial transmitters, trial broadcasts, frequency allocation, how to use new capacity, the taxes paid by private broadcasters, providing viewers with new digital equipments. At this point, it is also observed that the state and public service broadcaster are supposed to meet the costs and accordingly, on some occasions state and public service broadcaster meet the costs.

As a matter of fact, the first clear result in Turkish context as to the future of terrestrial television is that in the process of switching to digital television, private broadcasters' illegal position is to be legalized. In this contexts, the implementation of "annual frequency fees" seem to have solved decade-long problem of occupying "public good frequencies". Yet, it is observed that this situation may be subject to fierce discussions in the near future. Because, this solution will most likely mean to "acquired rights" for digital terrestrial television era. Besides, whether new broadcasters will be licensed or not, or whether there will be regulation for new digital services on terrestrial television has not still been clear. However, it is understood that private broadcasters will most probably have demands for new channels and new services.

Actually, it would be more plausible to discuss about some certain tendencies and estimations as to the switchover process of digital terrestrial television in Turkey. There has

been no detailed plan organizing the process, yet. In this respect, there are still uncertainities over the crucial points. In this context, the deadline of 2014-16 put for the end of switchover of analog terrestrial television transmission seems so assertive. Taking into account the fact that digital terrestrial frequency allocation plan can be completed at the end of 2006, 8-10 year-long switchover process seem to face to important problems when compared to the 15 year-long detailed calendar proposed by the Concept Report of 2002.

In this process, it is obvious that the vested interests of private broadcasters will be the main determinant in Turkish context, too. And in this respect, the process of digitalisation of Turkish television infrastructure will progress in favor of "increased commercialization". However, in order to reach more specific estimations seems to be impossible right now because of some peculiar problems of Turkey. Above all, as stated above, the process of digitalisation of Turkish television have not progressed in the context of a certain political approach and regulatory plan. Furthermore, research phase was very hard due to the problems in reaching valuable information about the ongoing process which does primarily stem from keeping information as a state secret by state officers. Besides, the process is seen by both public and private executives as an issue of 'engineering'. And this perspective causes a deep shallowness at the side of public which also makes it difficult for the researcher to follow developments with its entire dimensions.

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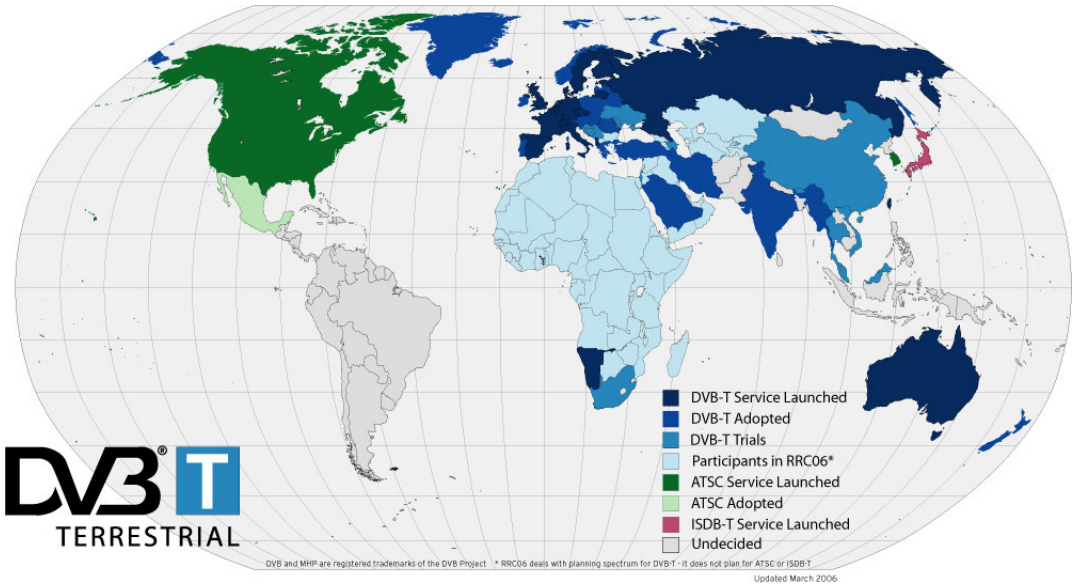
APPENDICES

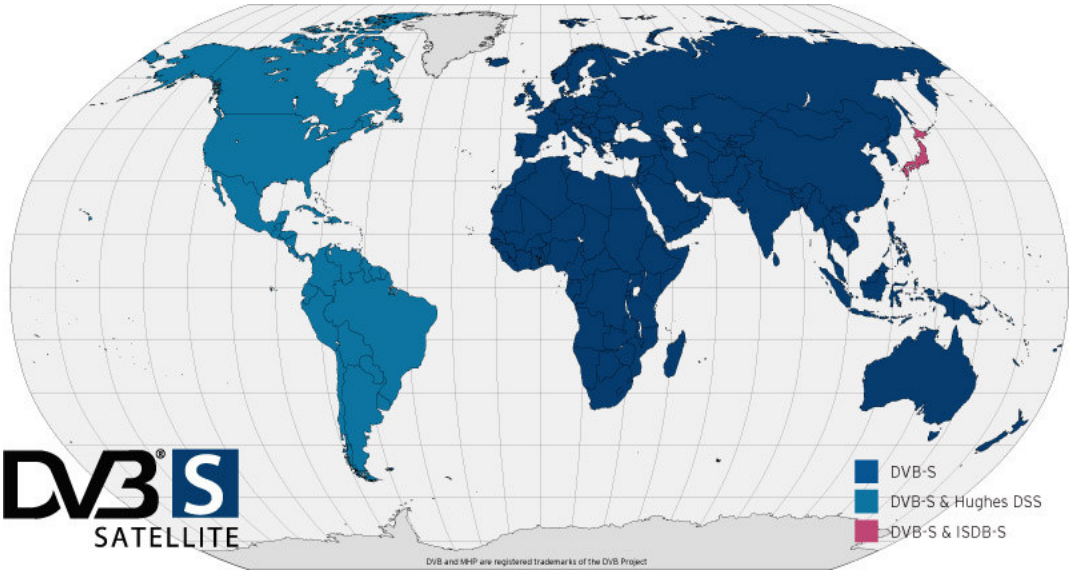
A. DIGITAL TELEVISION TRANSMISSION STANDARDS IN THE WORLD



Source: www.dvb.org

Figure 1

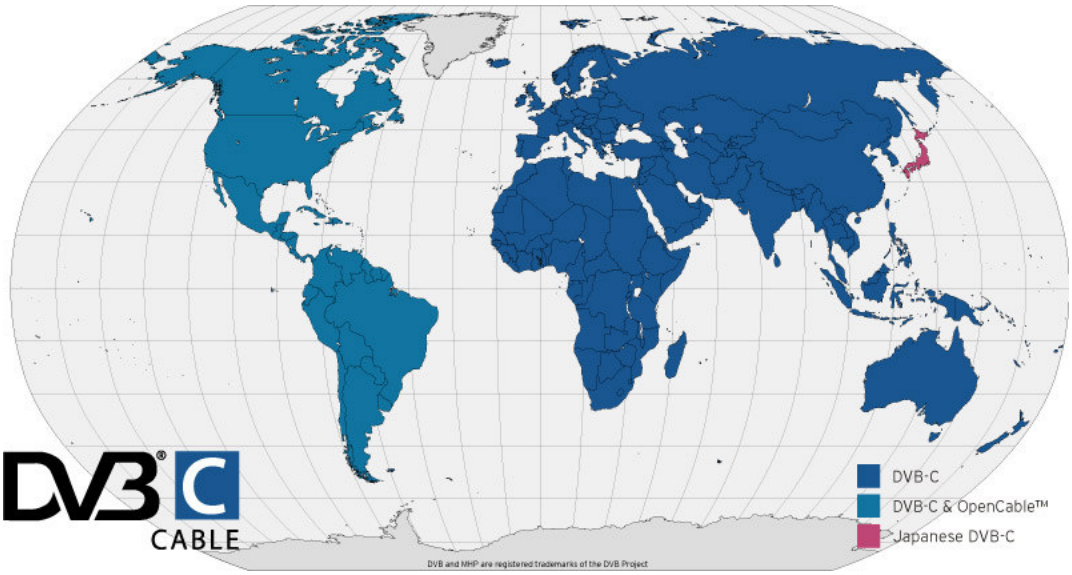
Digital Terrestrial Television Transmission Standards



Source: www.dvb.org

Figure 2

Digital Satellite Television Transmission Standards



Source: www.dvb.org

Figure 3

Digital Cable Television Transmission Standards