International Journal of Science Culture and Sport (IntJSCS)
September 2015 : 3(3)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS442

Field ***:*** *Communication*
Type ***:*** *Research Article*
Recieved:*24.07.2015* - ***Accepted:****09.09.2015*

History of Satellite TV Broadcasting and Satellite Broadcasting Market in Turkey

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Abstract

The present study analyses the satellite broadcasting that is the first important development that emerged as a result of digitalization in communication technologies and its reflections in Turkey. As the first milestone in the globalization of television broadcasting, satellite broadcasting provided substantial contribution towards the development of the media. Satellite broadcasting both increased the broadcasting quality and geographical coverage of the television media. A conceptual study was carried out in the first part of the study in connection with the history of satellite broadcasting in Turkey and across the world. In the research part of the study, an analysis was performed on 160 television channels that broadcast in Turkey via Turksat Satellite. Economic structure of the television channels broadcasting in Turkey via satellite was studied and an analysis was performed on the operational structure of the channels. As a result of the study, it was emphasized that the television channels broadcasting via satellite platform also use other platforms for the purpose of spreading their broadcasts and television channel owners make investments in different branches of the media, too. Capital owners invest in different business areas other than the media although television channels broadcasting via Turksat mostly focus on thematic broadcasting and make effort to generate economic income from advertisements. Delays are encountered in the course of the convergence between the new media and television channels that broadcast only from the satellite platform and such television channels experience more economic problems than the other channels. New media and many TV broadcasting platforms emerged as a result of the developments in the communication technologies. In television broadcasting, satellite platform is not an effective platform on its own. Channels make effort to reach to more people by using other platforms in addition to satellite broadcasting.

Keywords: Television, Satellite Broadcasting, Satellite Broadcasting in Turkey, Türksat Satellite

Uydu TV Yayıncılığının Tarihi ve Türkiye'de Uydu Televizyonculuğu Pazarı

Öz

Bu çalışma iletişim teknolojilerinin dijitalleşmesi sonucunda ortaya çıkan ilk büyük gelişme olan uydu yayıncılığı ve onun Türkiye'deki yansımalarını incelemektedir. Televizyon yayıncılığının küreselleşmesinde ilk büyük kilometre taşı olan uydu yayıncılığı mecranın gelişmesine büyük katkılar sağlamıştır Uydu yayıncılığı televizyon mecrasının yayın kalitesini arttırırken coğrafi erişimini de genişletmiştir. Çalışmanın birinci bölümünde uydu yayıncılığının dünyadaki ve Türkiye'deki tarihçesine yönelik kavramsal bir araştırma yapılmıştır. Araştırmanın uygulama bölümünde ise Türkiye'de 2015 yılında Türksat Uydusu aracılığı ile yayın yapan 160 televizyon kanalı ile ilgili bir analiz yapılmıştır. Türkiye'de uydu platformunu kullanarak yayın yapan televizyon kanallarının ekonomik yapısı incelenmiş ve kanalların işletme yapısı ile ilgili bir analiz yapılmıştır. Araştırmanın sonucunda uydu platformu aracılığı ile yayın televizyon kanallarının bu platformun dışında kalan platformları da yayınlarını yaymak amacıyla kullandığı, televizyon kanallarının sahiplerinin medyanın farklı kollarında da yatırımlar yaptığının altı çizilmiştir. Türksat uydusu aracılığı ile yayın yapan televizyon kanalları daha çok tematik yayıncılık yapmakta, ekonomik gelirlerini reklamlardan sağlamaya çalışsa da sermaye sahipleri medya yatırımlarının dışında farklı iş kollarında da yatırımlar yaptığı görülmüştür. Sadece uydu platformundan yayın yapan televizyon kanallarının yeni medya ile yakınsamasında gecikmeler yaşanırken, bu televizyon kanalları diğerlerine göre daha fazla ekonomik sorun yaşamaktadır. İletişim teknolojilerinde yaşanan gelişmeler sonucunda yeni medya ve pek çok TV yayın platformu ortaya çıkmıştır. Uydu platformu televizyon yayıncılığında tek başına güçlü bir platform olmamaktadır. Kanallar uydu yayınlarının yanında diğer mecraları da kullanarak daha fazla sayıda insana ulaşmaya çalışmaktadır.

Anahtar Kelimeler: Televizyon, Uydu Yayıncılığı, Türkiye'de Uydu Yayıncılığı, Türksat Uydu

Introduction

1. Satellite Concept and Its History

As a key element of communication, a satellite is a celestial body (or artificial object) that is within a spatial area of gravity and moving based on the physical properties of this area. Satellites continue to move around the world on a pre-defined orbit mostly because of the gravitational force of the earth (Uluc, 2000: 508).

In the course of history, many science fiction works addressed the Moon that is the closest neighbour and the only satellite of earth. "The Man In the Moon" written by Francis Godwin in 1638, "A Voyage to the Moon" written by Hector Savinien in 1649, Consolidator in which Daniel Defoe wrote about voyages between the moon and earth in a spacecraft in 1705, "From the Earth to the Moon"- a literary classic written by Jules Verne in 1865 and "The Brick Moon" written by Edward Hale in 1869 may be shown as examples to the works written in this area. Different from the others, "The Brick Moon" by Hale is the first work that brought forward the idea of satellite as we know today. This work referenced a brick satellite on the polar orbit. He told that residents of this satellite helped mariners find their way on the sea by sending signals using the Morse code. In 1923, Herman Oberth brought forward the first ideas about technological satellites in his work called "The Rocket Into the Planetary Space". He argued that a rocket with optimum speed can carry certain loads to an orbit around the earth and space stations can be used for worldwide communication (Cakaloz, 2007: 3-4).

Arthur C. Clarcke, an officer in British Royal Air Forces that brought all of the aforementioned scientific works and speculations together, is considered as father of the contemporary communication satellites industry. He calculated the geosynchronous orbit that is 26.400 miles above the earth and discovered its exact location. Therefore, this orbit has been named The Clarke Orbit by The International Astronomical Union.

Arthur C. Clarke argued that an artificial satellite to be position in the orbit that is known as The Clarke Orbit today can solve the problem in a letter he sent to British Wireless World magazine on February 1945 as a response to the efforts of seeking a solution for a worldwide radio broadcasting that were initiated at the end and after the Second World War. In his letter, Clarke said:

> *"...An artificial satellite position at an optimum distance to the earth will make one tour in 24 hours. Thus such a satellite remains in the same position relative to a person looking from the earth and it can be observed optically from almost half of the locations on earth. These transmission stations that are in the right orbit and at 120 degrees angle in reference to each other can provide television and microwave coverage area over the entire planet..."* and developed the first idea on the contemporary communication satellites (Cakaloz, 2007: 4).

2. Types of Satellites

Satellites are classified in four groups based on the intended purposes (Uluc, 2000: 508):

- ✓ Meteorological Satellites: They are used for the purpose of weather forecasting
- ✓ Military Satellites: They are the satellites sent into the space by super-power states for the purpose of early warning, nuclear explosion researches, discovery and monitoring of military activities.

- ✓ Research Satellites: They are used for conducting researches on agriculture, forestry, water resources and resources on earth's surface.
- ✓ Communication Satellites: They are the satellites that use very short radio waves preventing the reflections in the ionosphere called microwave in order to receive the radio, television and telephone signals at one point on earth and transmit them to another point.

Communication satellites are grouped in three sub-categories (Kayabasi, 2011: 5):

- ➢ Low-Power Satellites: They are the satellites with output power per channel within 5-10 Watt range that are used by the international communication organizations such as Intelsat, Intelsputnik. These satellites can transmit to 42.4% of the earth's surface.
- ➢ Medium-Power Satellites: Satellites with output power per channel that is around 40 Watts are within the sub-category of medium-power satellites. These satellites are used for regional satellite platforms and international communication satellite platforms. They are the most common satellites of our day.
- ➢ Direct Broadcast Satellites: In the "Global Administrative Radio Conference" that was held in 1977, direct broadcast conditions were reviewed and KU band was allocated for direct satellite broadcasts. Direct broadcast satellites allow TV broadcasts to be viewed directly by using private antennas without a transmitter or receiver between the satellite and viewers.

3. Television Broadcasting in Turkey and Its History

In Turkey, the first television broadcasting was performed in 1952 in Istanbul Technical University. However, the broadcasting efforts remained limited due to the lack of a transmitter. The first regular television broadcasting started on 31st of January 1968 in Ankara as a trial and it was performed within certain time periods for 3 days a week. As sufficient number of televisions were not available in our country during that period, television broadcast became widespread in 1970s (Tanriover, 2011: 11).

In 1970s, a single-channel system started broadcasting under the monopoly of the state. Daily broadcasting initiated and the hours of broadcasting were increased in that period. Local productions were given place in the first two years of the trial broadcasts, however foreign productions started to be broadcast upon increasing the broadcasting hours and insufficient number of the qualified personnel. Approximately two third of the programs broadcast in single-channel TRT period were foreign productions. In 1980s, with the impact of the military coup and based on the idea that television has great influence on the masses, the programs were broadcast upon applying a strict political control and censorship in an attempt to give voice to the official ideology (Tanrıöver, 2011: 13).

In 1980s when Turgut Ozal was the prime minister, legal regulations were made in connection with television broadcasting. In those years that witnessed the state monopoly, TRT started a second channel which was followed by a third channel that served to South-East Anatolian region. A television broadcasting battle started between TRT and Magic Box in 1990 when Magic Box that is outside the Turkey borders started broadcasting illegally by using the satellite technology. A constitutional amendment became compulsory and state monopoly was revoked in 1993 upon establishment of MagicBox.

Table 1. Milestones of Turkish Television Broadcasting

Year	
1952 /-1953	First television broadcasting trials
1964	Turkish Radio and Television Corporation (TRT) Law No. 359 entered into force.
1968	TRT Ankara Television started trial broadcasting.
1981	The first colour television broadcasting (on new year's eve)
1983	TRT Law No. 2954 was adopted.
1986	TRT 2 started broadcasting
1988	Cable TV broadcasting started
1989	TRT 3 and the first regional channel TRT GAP started broadcasting.
1990	The first commercial (private) TV channel Magic Box-Star (without any legal regulation) started broadcasting.
	TRT 4 and TRT INT started broadcasting.
1992 /-1994	10 new commercial channels (general) started broadcasting.
1992	AGB started measuring first television ratings
1993	Constitutional amendment revoking the state monopoly over radio-television broadcasts was accepted.
1994	Former Law No. 3984 on Radio and Television Corporation and Broadcasts entered into force.
	Supreme Board of Radio and Television (RTUK) was established.
1996	NTV, the first thematic news channel, started broadcasting.
1999	Digital TV agreement was made; Digiturk was founded.
2009	TRT 6, the first television channel broadcasting in Kurdish, started broadcasting.
2011	Law No. 6112 on Supreme Board of Radio and Television (RTUK) entered into force.

Source: (Tanrıöver, 2011: 15)

4. History of Satellite Broadcasting

History of the satellite broadcasting dates back to 1957 when Sputnik 1, the first artificial satellite was produced and sent into the space by the Soviet Union as a result of the cold war between two super-powers of the time- the USA and USSR. Satellite named "Explorer" was sent into the space by the USA one year after Sputnik 1 was launched. Although the aforementioned two satellites are considered as ground-breaking development in satellite operations, they were not intended for communication. Communication satellites were sent into the space 4 years after the aforementioned two satellites (Kirik, 2014: 6).

The first big trial in satellite communication was done with "Echo 1" satellite that was launched on 12 August 1958. The first satellite television broadcast was done with the program named "Mondevision" that was broadcast via "Telstar" satellite in 1962. Satellite broadcast that lasted for a few minutes during the first trials continue for 24 hours uninterruptedly in our day.

Many countries came together and established INTELSAT (The International Communication Satellites Organization) in 1964 upon understanding the importance of the satellite broadcast. In parallel with this organization's activities, "Early Bird"- the first communication satellite of the world- was sent into the space in 1965. The first colour television broadcast was performed worldwide over Early Bird (Kirik, 2014: 7).

Upon establishment of INTELSAT, a space communication organization named "INTERSPUTNIK" was founded in the lead of the Soviet Union in 1971. In 1976, USA sent "Marisat" satellite into the space for the purpose of marine communication. Upon success of this satellite that is used for the purpose of marine operations, INMARSAT organization was founded in England in 1979 of which Turkey is also a member. In 1984, Chine launched its first satellite named STW-1. Following the aforementioned developments, a competition started for having a satellite in the space and countries accelerated their efforts towards developing their own national satellites.

Although satellite broadcast technology use lower number of stations per kilometre when compared with the ground broadcast stations, cost of the ground stations of the satellite technology is very high. At present, continuous investments are made in the satellite technology with the effect of globalization. In the light of such developments, DBS (Direct Broadcasting System) technology spread across the world. DBS is a system that allows direct viewing of television programs through personal antennas without using a transmitter between the satellite and user.

4.1. Satellite Broadcasting in Turkey

The initial efforts in connection with satellite broadcasting in Turkey date back to 1960s. Starting from 1960s, developments such as enactment of the Communication Satellites in USA and then establishment of INTELSAT in Europe were followed closely and technical infrastructure for satellite broadcasting was prepared.

In 1980s, innovations brought by fast-developing satellite technology in communication area around the world led to substantial changes in Turkey and Turkey became a member of satellite operating organizations Intelsat and Eutelsat. On 21st of March 1984, Golbasi ground station operated by Turksat A.S. started broadcasting to foreign countries through Intelsat

satellite that is above Atlantic Ocean. In 1986, Intelsat satellite was used to broadcast to all corners of Turkey and subsequently Turksat Project was initiated (Radio and Television Broadcasting Sector Report, 2014: 15-16).

One of the first important developments in connection with satellite broadcasting in Turkey is the satellite broadcasting performed by Firat Television channel for the locals of Elazig. The Project "Control of Satellite Antenna with Microcomputers and Broadcast Transmission" was implemented in 1991 upon proposal to Firat University's Research Fund and the university produced a transmitter with 1 Watt power through its own means. As a result of the first application in this area, the university started transmitting CNN broadcasts to the university campus via the satellite. Despite the low power capacity of transmitter certain districts in Elazig that are close to the campus started watching CNN. Successful transmission of the broadcast and positive reactions from the locals in Elazig led to the procurement of new transmitters and broadcasts of Show TV, TeleOn, Super Channel, TV5, Deutsche Welle were transmitted to all district of Elazig starting from June 1992. On October, 1992, opening ceremony of the University was broadcast in the evening hours upon initiating recorded broadcasting. In the same year, recorded contents produced by Firat TV were broadcast for one hour a day and broadcasts of other channels were transmitted in the remaining hours, thus 24-hour satellite broadcasting was started (Varol, 2001: 1139).

4.2 Satellites of Turkey

Turksat 1B, first satellite of Turkey, provided services between 1994 and 2006. Turksat 1B providing services on 31° East Longitude had a capacity of 6 transponders of 72 Mhz and 10 transponders of 36 Mhz. The following table shows the properties of Turksat 1B.

Table 2. Properties of Turksat 1B

Launch Date	10 August 1994 (Ariane 4)
Orbit Location	31.0° East Longitude
Transponder	16 Ku transponder
	6 wideband (7 Mhz) and 10 narrowband (36 Mhz)
Coverage Areas	Turkey, Europe, Middle Asia
Term of Mission	12 Years
Producer	Alcatel Alenia Space Industries
Deactivation Date	2006

It started providing services at 42° East position in 1996. It has been deactivated after Turksat 3A satellite orbited at the aforementioned coordination. It provided services with a capacity of 9 transponders of 36 Mhz, 2 transponders of 54 Mhz and 5 transponders of 72 Mhz.

Properties of Turksat 1C satellite that provided services between July 1996 and September 2010:

Table 3. Properties of Turksat 1C

Launch Date	10 July 1996 (Ariane 4)
Orbit Location	31.0° East Longitude
	42.0° East Longitude
Transponder	16 Ku transponder (each with output power of 55 dBW);
	5 wideband (72 Mhz), 2 medium band (54 Mhz) and 9 narrowband (36 Mhz)
Coverage Areas	West (Turkey and Europe)
	East (Turkey and Middle Asia)
Term of Mission	14 Years
Producer	Alcatel Alenia Space Industries
Deactivation Date	23 September 2010.

Turksat 2A satellite was launched with Ariane 4 rocket on 10 January 2001. The satellite that started providing services on February 2001 is still active. It provides services on 42° East Longitude, in the same position as Turksat 3A with more than 50 DBW EIRP (effective isotropic radiated power) within a wide coverage area. Turksat 2A provides quality satellite broadcast service for the Turkish communities living in Europe and the Middle East including Russia with small antenna dishes with 50-60 cm diameter. Properties of Turksat 2A are shown in Table 4:

Table 4. Properties of Turksat 2A (Resource: Turksat.com.tr)

Producer	**Alcatel Alenia Space Industries**
Platform	SpaceBus 3000B3
Stabilization Type	3 Axis Control
Start of Mission	2001
Wingspan	36.5m
Orbit Location	42° East Longitude
Ku-Band Payload General Properties	**Uplink Coverage Areas**
	East, West
	Steerable S1 and S2
	Downlink Coverage Areas
	East, West
	Steerable S1 and S2
	Number of Transponders
	32
	Total Band Width
	1092 MHz
Platform's Technical Properties	**Nominal Launching Weight**
	3400 Kg.
	Maximum Power Consumption
	4100 Watt

The production of Turksat 3A started on 10 February 2006, it has been launched on Ariane 5 rocket from Kourou Guayana Space Centre on 13 June 2008 and it provides services on 42° East Longitude. Turksat 3 A with 24 transponders of 120 Watts has a higher capacity of use with 1296 Mhz when compared with the other satellites. It is used for direct TV broadcasting over Europe, Turkey and the Middle East. Turkey coverage area that has the high power advantage of Turksat 3A satellite is used for TV broadcasts to be uplinked from Turkey, wideband data services, VSAT and narrowband data services.

Table 5. Properties of Turksat 3A

Producer	**Thales Alenia Space Industries**
Platform	SPACEBUS 4000B2
Stabilization Type	3 Axis Control
Start of Mission	2008
Wingspan	30m
Orbit Location	42° East Longitude
Ku-Band Payload General Properties	**Uplink Coverage Areas**
	Turkey, East and West
	Downlink Coverage Areas
	West and East
	Number of Transponders
	24
	Total Band Width
	1296 MHz
Platform's Technical Properties	**Nominal Launching Weight**
	3110 Kg.
	Maximum Power Consumption
	6126.9 Watt

Turksat 4A that started its mission on 15th of February 2014 provides services on 42° East Longitude with a wingspan of 25.27 m. It has a wide coverage area including North Africa, Europe, Turkey, Middle East and Asia. It offers a high capacity of use with total bandwidth of 1750 Mhz.

Table 6. Properties of Turksat 4A

Producer	**Mitsubishi Electric Corporation**
Platform	DS2000
Stabilization Type	3 Axis Control
Start of Mission	15 February 2014.
Wingspan	25.27 m
Orbit Location	42° East Longitude
Ku-Band Payload General Properties	**Ku-Band BSS Coverage Areas**
	Turkey, North Africa, Europe
	Middle East, Asia
	Ku-Band FSS Coverage Areas
	Africa, Turkey
	Europe
	Number of Transponders
	30
	Total Band Width
	1750 Mhz
Platform's Technical Properties	**Nominal Launching Weight**
	4910 Kg
	Maximum Power Consumption
	7670 Watt

Turksat 4B that started its mission in the second quarter of 2015 provides services on 50° East Longitude different from the other satellites. It has a bandwidth of 3400 Mhz with wingspan of 25.26 metres. The capacity allocated for data communication and live broadcasts on Turksat 3A and Turksat 4A has been transferred to Turksat 4B satellite and the television broadcasting capacity on 42° East orbit has been increased.

Table 7. Properties of Turksat 4B

Producer	**Mitsubishi Electric Corporation**
Platform	DS2000
Stabilization Type	3 Axis Control
Launch Date	2015 Quarter 2
Wingspan	25.26m
Orbit Location	50° East Longitude
Payload General Properties	**Ku-Band Coverage Areas**
	Turkey, East (Turkey, Middle East, Asia) and West (Turkey, North Africa, Europe)
	Ku-Band Coverage Areas
	Spot coverage areas in Turkey, Middle Asia and Europe
	Number of Channels
	43
	Total Band Width
	3400 MHz
Platform's Technical Properties	**Nominal Launching Weight**
	4977 Kg.
	Maximum Power Consumption
	7600 Watt

4.4. Satellite Television Channels in Turkey

As of 2015, there are 293 television channels and 92 radio channels broadcasting via Turksat satellite. The number of satellite television and radio channels are shown in Figure 2 based on years.

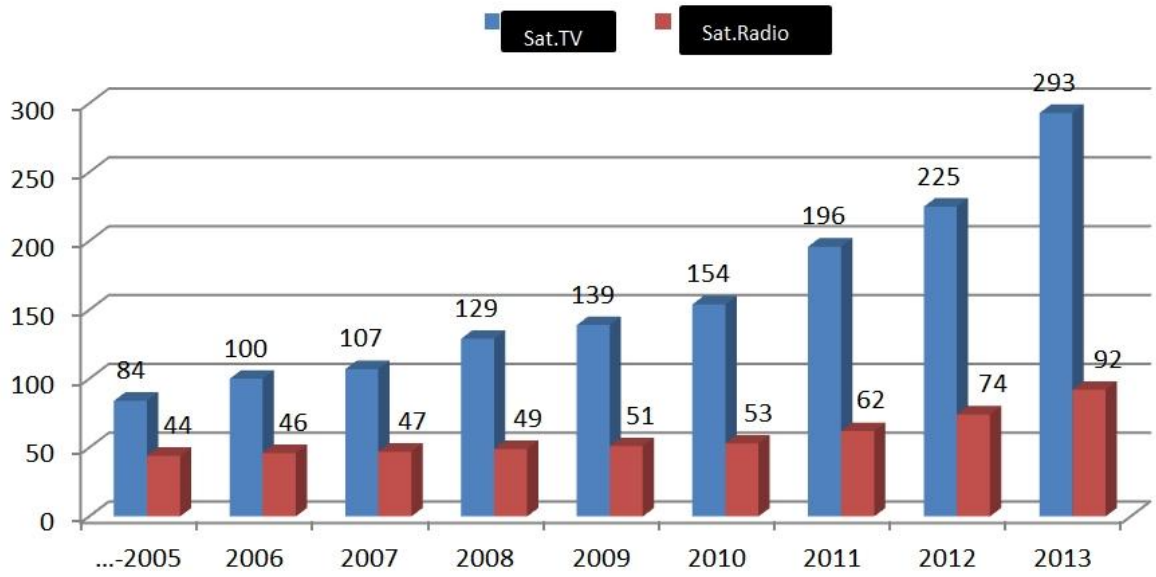

Figure 1. Number of Companies with Satellite Broadcasting License Based on Years

Another broadcasting type performed via satellite technology is the platform broadcasting. A platform operator is described as "a corporation that converts multiple broadcasting service into one or more signals and transmit through satellite, cable and similar systems as encrypted and/or non-encrypted services directly to the viewers" in the Law No. 6112. Broadcasting services using satellite systems are provided by infrastructure operated directly to the viewers or they are provided to subscribers by the satellite platform service providers through renting a capacity from the satellite infrastructure operators. Platform operators and the number of the subscribers are shown in Table 8 based on years.

Table 8. Number of Subscribers of Platform Operators

PLATFORM OPERATOR	**2010**	**2011**	**2012**	**2013**
DİGİTURK	2,206,510	2,458,821	3,265,436	3,461,484
D-SMART	422,984	606,837	1,531,599	1,706,915
TÜRKSAT KABLO TV		1,243,985	1,249,241	1,182,298
TTNET (TİVİBU EV)		32,094	155,738	266,996
TOTAL	2,629,494	4,340,752	6,202,014	6,617,693

Resource: (RTUK- THE SUPREME BOARD OF RADIO AND TELEVISION Sector Report, 2014: 81)

The Research: Satellite Channels Broadcasting in Turkey

In the present study performed in connection with the structure of television channels broadcasting via Turksat satellite, an analysis was performed on 160 television channels randomly selected among 293 television channels broadcasting via Turksat satellite. Executives of the television channels addressed in the present study were interviewed over the telephone and they were asked nine questions in connection with the content-economic structure of the television channels. Data obtained from the telephone interviews that lasted approximately ten to fifteen minutes were analysed with SPSS 21.0 statistics program. Population of the study consists of television channels broadcasting via Turksat satellite, it is limited with 160 television channels, in other words, 54 percent of the television channels broadcasting via Turksat Satellite.

The research questions of the study are as followed:

1. What other platforms do television channels broadcasting via Turksat use to reach to their viewers. What is the number of channels that only broadcast via satellite?
2. How is the economic structure of the television channels broadcasting via satellite? How did the channels create an employment structure and economic income generation methods?
3. What are the formats used by channels that broadcast via satellite?
4. What is the scale of convergence between the new media, social media and television channels broadcasting via Turksat satellite? What is the level of social media presence of channels?

Findings

Among 160 television channels broadcasting via Turksat and consisting the population of the present study, 85 channels are in Istanbul, 12 of them are in Ankara, 7 of them are in Gaziantep and 5 of them are in Bursa. The findings show that the broadcasting centre of the media is Istanbul.

Table 9. Broadcasting Centres of Television Channels

İstanbul	85	**Ordu**	2
Ankara	12	**Sivas**	2
Gaziantep	7	**Adiyaman**	1
Bursa	5	**Aksaray**	1
Adana	3	**Antalya**	1
Erzurum	3	**Bitlis**	1
İzmir	3	**Bolu**	1
Kayseri	3	**Isparta**	1
Sanliurfa	3	**Kocaeli**	1
Balıkesir	2	**Konya**	1
Batman	2	**Malatya**	1
Denizli	2	**Manisa**	1
Diyarbakır	2	**Mersin**	1
Elazığ	2	**Rize**	1
Eskisehir	2	**Samsun**	1
Karaman	2	**Trabzon**	1
T.R.N.C.	2	**Van**	1

The study revealed that 37 of 160 television channels do not broadcast over the Internet or any platform other than the satellite platform. The aforementioned 37 television channels choose satellite as the only broadcasting platform and the remaining television channels broadcast over multiple platforms different than the satellite platform. 62 television channels broadcast over the internet while 98 television channels provide live broadcast services over the internet. 20 of the television channels are a member of Digiturk platform. 48 channels broadcast in DSmart platform. It was seen that 24 channels broadcast in Teledunya and 22 channels broadcast in cable broadcasting platform. 15 channels are engaged in terrestrial broadcasting in addition to satellite broadcasting.

Table 10. Other Platforms Owned by TV Channels Broadcasting via Turksat Satellite

	(n)	(%)
Internet	62	27.19
Digitürk	20	8.77
DSmart	48	21.05
Teledunya Cable	24	10.53
Terrestrial Broadcast	15	6.58
Analogous Cable	22	9.65
Satellite Only	37	16.23
Total Platforms	**228**	**100.00**

62 of the television channels that are within the scope of the present study offer a combination of contents. 35 of them broadcast news programs, 29 broadcast music, 19 broadcast documentaries and 15 broadcast sports programs.

Table 11. Broadcasting Formats of Channels [1]

	(n)	(%)
News	35	18.42
Music	29	15.26
Combination	62	32.63
Documentary	19	10.00
Sports	15	7.89
Movies/Series	6	3.16
Kids	5	2.63
Religious	9	4.74
Education	2	1.05

[1] The total number of responses are higher than the number of television channels studied as some Television channels stated that they broadcast more than one type of content.

Health	1	0.53
Economics	1	0.53
Direct Sales	4	2.11
Magazine	1	0.53
Agriculture	1	0.53
Number of Responses	**190**	**100.00**

In the study conducted in connection with the employment structure of television channels broadcasting via Turksat satellite, executives of the channels were asked about the number of employees. Officials of 36 television channels did not share information on the number of employees. Findings show that there are 6 television channels with more than 1000 employees and 24 channels with less than 10 employees. There are 34 channels in total with 21-30 employees.

Table 12. Number of Persons Working in Television Channels

	(n)	**(%)**
0-10 Persons	24	15.00
11-20 Persons	26	16.25
21-30 Persons	34	21.25
31-40 Persons	18	11.25
41-50 Persons	11	6.88
51-100 Persons	5	3.13
More Than 101 Persons	6	3.75
Channels that did not share information	36	22.50
Total	**160**	**100.00**

Another question raised in the study was the economic structure of television channels broadcasting via Turksat satellite. Only one of 160 channels studied within the aforementioned scope refrained from sharing information in connection with the type of advertisements accepted. 5 channels stated that they accept spot, sponsorship advertisements

and commercial for direct sales. The remaining 154 channels stated that they use one or two of the three advertisement types. There are 71 television channels with spot advertisement revenues, 67 channels with sponsorship revenues and 78 channels accepting advertisements for direct sales.

Table 13. Types of Advertisements Broadcast by TV Channels [2]

	(n)	(%)
Spot Advertisement	71	31.98
Sponsorship	67	30.18
Direct Sales	78	35.14
All	5	2.25
No Information	1	0.45
Total	**222**	**100.00**

Analysis on the ownership structure of television channels showed that 88 of the channel owners have media investments other than the channel in question. 72 television channel owners do not have any investments other than the media sector. 88 media bosses that have investments in the media sector invested in multiple area in the media industry. 21 of the channels studied are owned by the media groups operating in our country. The owners of the remaining 67 channels have own radios, newspapers and magazines, other television channels and news sites on the internet.

Table 14. Availability of Other Media Investments

	(n)	(%)
Other Media Investments Available	88	55.0
Other Media Investments Non-Available	72	45.0
Total	**160**	**100.0**

43 of the television channel owners have radio channels. 21 of them own a newspaper, 11 of them own a magazine, 4 of them own a second television channel, 3 of them own a news web

[2] The total number of responses are higher than the number of television channels studied as some Television channels stated that they broadcast more than one type of content.

site on the internet. 21 of the television channels operate under the umbrella of media groups showing vertical and horizontal growth.

Table 15. Different Media Investments of TV Channel Owners

Radio	43
Newspaper	21
Magazine	11
Television	4
News Agency	3
News Site on the Internet	3
Media Group	21
Total	**160**

Among 160 television channels included in the study population that broadcast via Turksat satellite platform, 74 of them have investments outside the media sector. Construction sector is the area with the highest number of investments after media sector. Media owners generate the financing resources of their media establishment from different business lines. It was observed that construction and various trade activities take the lead among these investments.

Table 16. Availability of Investments Other Than Media

	(n)	**(%)**
Non-available	86	53.75
Available	74	46.25
Total	**160**	**100**

Table 17. Other Sectors Invested in by Television Channel Owners

Construction	12	**Energy**	2
Education	6	**Holding Owner**	1
Politics	5	**Finance**	2
Textile	5	**Photography**	1
Free Trade	5	**Football**	1
Holding	11	**Food**	1
Health	1	**White Appliances Sale**	1
Herbal Product Imports and Sales	2	**Law**	1
Multiple Partnerships	2	**Religious**	1
Health	2	**Book Publishing**	2
Tourism	3	**Jewellery**	1
Marble	2	**Engineering**	1
BANK	1	**Insurance**	1

The study conducted in connection with the presence of television channels broadcasting via Turksat satellite in the new media and social media platforms shows that 25 television channels do not have an internet site.

Table 18. Internet Site Ownership of Television Channels

	(n)	**(%)**
Internet Site Available	135	84.4
Internet Site Non-Available	25	15.6
Total	**160**	**100.0**

20 of the television channels have a Facebook account, 45 of them have a Twitter account, 103 have no Youtube account and 145 of them have no Instagram account. The aforementioned data showed that television channels broadcasting in the conventional media

that chose Turksat satellite as the broadcasting-distribution platform mostly prefer Facebook network in the social media. Instagram and Youtube are the least preferred social media platforms. The low preference rate of television channels in connection with Youtube that is a visual platform draws attention as a though-provoking finding about the convergence between the conventional television broadcasting and the new media.

Table 19. Number of Social Media Accounts

	Facebook	**Twitter**	**Instagram**	**Youtube**
Number of TV Channels with an Account	140	115	15	57
Number of TV Channels without an Account	20	45	145	103

Conclusion

Satellite broadcasting that developed in 1980s showed presence in Turkey, too. Particularly in 1990s, foreign television channels broadcasting in Europe came together with Turkish viewers thanks to the dishes and satellite receivers introduced in Turkey. Turkish television channels that started broadcasting from foreign countries in 1990s contributed to the development and popularization of the satellite broadcasting in Turkey. Antenna dishes installed on the roofs of the Turkish houses particularly after that period contributed to the spreading of satellite broadcasting. The improvement in the Turksat satellite's capacity increased the number of radio and television channels broadcasting via this platform. The reduction in the prices of the satellite systems also contributed to the popularization of this platform.

The first satellite broadcasting in Turkey was performed by Firat University in 1991. Satellite broadcasting operations that increased following the aforementioned trial showed a substantial growth with the satellite systems established by Turksat one after each other. Thus, the number of television channels broadcasting with the satellite license increased year by year. A part of the television channels with satellite licence broadcast only via the satellite platform while some of them broadcast via other platforms, too. Some of the aforementioned different platforms are Digiturk, DSmart, Internet and Teledunya. Findings of the study revealed that approximately one third of the television channels broadcast only via satellite platform. Corporate structure of the television channels that broadcast only via satellite platform is weaker when compared with the others. Such channels are mostly financed by one boss. Television channels broadcasting via satellite that also use other platforms for broadcasting have a relatively advanced corporate structure.

Television channels broadcasting via Turksat satellite also use internet and Dsmart platforms. Analysis on the employment structure of channels show that most of them operate with teams of 21 to 30 persons. 21.25 of the satellite television channel owners employ 21-30 persons.

Analysis on the revenues of television channels show that commercials aimed at product sales and named as direct sale advertisements are the most import income sources of the satellite television channels. 35.14 of the channels broadcast such advertisements and they generate a substantial part of their revenues with the money earned from this type of advertisements. Direct sale advertisements are followed by spot advertisements with 31.98 percent and sponsorship income with 30.18 percent. As most of the satellite channels broadcast thematic programs, they receive lesser number advertisements when compared with the main stream media. This handicap reflects on the advertisement types and the income generated from spot advertisements and sponsorships remain at limited levels. On the other hand, main stream television channels generate a substantial part of their revenues from spot advertisements and sponsorships.

One of the most important characteristics of media bosses in Turkey is their tendency towards investing in different business lines in addition to the media channel ownership. As a result of the aforementioned tendency that increased continuously since 1980, control and management of the media groups in Turkey passed onto the businessmen. Similar situation also applies to satellite television channels that are small-scale enterprises. The present study revealed that owners of 46.25 percent of the television channels broadcasting via Turksat satellite have other media investments, too. Areas invested by media owner businessmen are mostly construction and textile sectors. Owners of the local television channels that broadcast via only satellite platform invest in various business lines from book publishing to stationary, tourism to photography. Television channels broadcasting via platforms other than Turksat satellite platform are under the umbrella of holdings that grew vertically.

The analysis on the convergence between the television channels broadcasting via Turksat satellite and the new media shows that local television channels that address masses only through satellite broadcasting fell behind in the new media. 84.4 percent of the television channels studied have an internet site while the remaining 15.6 percent do not have an internet site. The presence of television channels that still lack an internet site in today's world is a thought-provoking situation for the sector. Analysis on the presence of television channels in the social media show that majority of the channels have a Facebook account and Instagram is the least preferred platform. Channels opened an account on Facebook, Twitter, Youtube and Instagram, respectively. The fact that only one third of the television channels have an account on Youtube that is considered as television of the social media is another important issue that draws attention. It is thought-provoking to see that there are still television channels broadcasting only via the satellite that fail to follow this trend in today’s media environment where television channels broadcast over the social media and offer their programs to consumers in YouTube platform. This situation is experienced particularly with local television channels that broadcast only via the satellite.

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