From Analog to Digital Radio Management:
The New Radio and New Media

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Abstract

The new technologic developments have changed traditional media in different ways. New media which has been created by the new technologic developments has created new forms of distribution. Radio is one of the media which has been affected by new media. This article expresses how the radio industry and radio management have been effected by the technological changes and how new media has effected them. The study in the first part gives a literature explanation of new media and radio management history. In the second part it examines how the demand of the audience has increased in new media and how the traditional radio listening habits have decreased. The data collection method has been supplied from the official surveys done in the last ten years for the radio listening trends. At the end of the study there is a determination of how new media has affected the traditional radio medium and gives brief information of the new forms of distribution of radio with new media.

Keywords: Radio, New Media, New Radio, Radio Ratings, Digital Radio

Introduction

Even if the radio media had been used as an intelligence and music device in its first period, it was the quickest, reliable and the most important device to getting news in World War 2. The Cold War period and World War 2 was the turning point for radio media and radio management. After World War 2, while the radio resigned its giving news job substituted for music and entertaining, with the ending of Cold War the radio tended to increase their mercantile broadcasting.

Radio management in the world has been doing under community and the model of mercantile. In America mercantile model, administration of radio even implementation during its history, in continental Europe and other countries the model of community administration implemented further. Radio administrations took on different missions in the model of public and mercantile administrations. In one of them the broadcasting which made for the benefit of community have come into the forefront and in the other one the broadcasting which is prepared with commercial perspective have come into the forefront.

The aim of this study is research of the historical evolution of the radio administration and coming up for discussion the effect of the new media's which affecting the life of the communities every passing day on the radio administration with the appearance of the new communication Technologies. This paper tried to find the answers of these questions:

1.   How the new media had an effect on the listener and how did it change the radio listener's habit to listen to the radio?
2.   How did the new media affect the economic structure of the radio management?
3.   What is the effect of the new media on the radio media's broadcasting styles?
4.   How the radio administrations give an answer to the new broadcasting style which the new media has created?
5.   How will the new media effect the radio management and ındustry's future?

Radio Managementin Turkey

The most important bases of the radio broadcasting had laid with the Italian physicist Marconi's success of convey the electromagnetic waves to forward 9 meter at first, then 274 meter and then 3 kilometer. Reaching the large masses of the radio happened with the transfer

the radio message which between two sides of Atlantic Ocean. This transoceanic communication had revealed the power of the radio media and speeded up the studies about the radio broadcasting. The first radio broadcasting which involved music and speaking, happened in America in December of 24, 1906.

Using of the radio had become widespread after World War 1. Two countries America and England, which the radio broadcasting had started, were the Pioneer of two different broadcasting systems. While mercantile model which based upon advertisement and sponsor had been developing in America, a community model which based upon license fee had been composed in England. (Kejanlıoğlu, 2004: 22)

First bases of the radio broadcasting in Turkey had been laid at the end of 1920's. In official records the first radio broadcasting in Turkey was May of 6, 1927. (Arapoğlu,1994:6). The first broadcastings had been done from Ankara and Istanbul. with wireless station which a French company set up.

Upon the radio's proliferation all around the world preparing the necessary substructure for radio broadcasting in Turkey and the foundation that radio broadcasting determined by law was required. When the radio broadcasting started in Turkey, the first radio management according to 406 numbered post and telegraph law, wireless, telephone, intercommunication rights were in PTT's power. While transmitter stations for radio set up, Turkey Isbank, Anatolian Agency and participations with other a few company, a new company had set up under the name of wireless telephone Turkish incorporated company and the ministry of interior had a deal with this company for 10 years. This company was not a commercial company, it was an establishment that consist of 2 big common community establishment. (Gürhani, 2006: 14). With dated January 8, 1926 license, it is allowed for ten years that the management of transmitting station which was established in the territory of Turkey in Ankara and Istanbul and also set up receiver and transmitter stations to other cities which the government approved. The whole of the capital of the company was Turks' and the partnership were: Turkish Isbank had got 40% of the capital (60.000 TL), Anatolian Agency had got 30% of the capital (45.000 TL), and the shares of the remaining amount of 30% had been owned to three real person as 15.000 TL.(Kocabaşoğlu,1980: 13). TTTAS was the first radio management in Turkey.

Radio management of Turkey between the dates of 1927 – 1936 was carried out by TTTAS Company. In 1936, the contract of the company was cancelled and management of the radio was given to PTT. The radio management of the PTT lasted from 1938 to 1940, and this field converged, a special law with 3837 numbered related to power of attorney General Directorate of the press and with the law about its duty. Radio management was given to General Directorate of the press with this law. The general directorate of the press managed the radio broadcasting until 1943. When the importance of radio broadcasting has increased during World War 2, with the numbered 4475 law Media General directorate was established in 1943. General Directorate of media worked until 1949. With the law of 5392 numbered, it took a name of directorate general of press and the tourism in 1949. With this arrangement, it was aimed that organizing the radio broadcasting on the base of national and international level. This foundation lasted its activity until 1960 coup d'etat. After 1960 coup d'etat, management of the radio was managed according to law of 5392 numbered.But in its organizational structure was changed a considerable amount.Again in this period, radio broadcasting was arranged with the law of 5392 numbered and then with the law of 265 numbered. (Kuşkonmaz, 2008: 21).

With the law of numbered 265 in 1963, management of the radio broadcasting of Turkey transferred to the ministry of tourism and publicity temporarily. Turkish radio and television corporation law of establishment become valid in May of 1, 1964. Corporation of Turkish Radio Television (TRT) was established as an autonomous public economic enterprise which had a legal entity with the law of numbered 359. It was conjoining to prime ministry with changing some of its matters in 1972.Investment finance program of the corporation prepared according to law of numbered 440, but the board of management was labored to this law and it was formed according to article 4. (Department of finance, 1980:425) The foundation was tied to censorship of state auditing board on executive,financial and technical subjects. Its capital was 1 million liras and whole of them belonged to treasure.Operation capital belonged to the government and there was not any participation and private enterprise (Güllülü, 1981:53).

In 1950's basing on predication that article 5 law of wireless an official organization could be able to establish a transmitter and article 6 of law could be able to broadcasting, some of the

radio channels which shortwave broadcasters started to broadcasting. These corporations are: Istanbul Technical University(1946), Istanbul Technical School radio(1950), Istanbul University college of science radio(1951), Turkey(Ankara) Police Radio(1954), Ankara(Mamak) Military Radio(1960), Meteorology radio(1960), (Kocabaşoğlu,1980:286). All of these radios couldn't advertise because they were limited with law.

From 1964 to 1991 TRT had a monopoly on radios in Turkey. Management of radio in this period had been done by the government. Mercantile radio broadcasting in Turkey started in 1991 with the establishing of the radio channel which private capital owners had. Olay Fm Radio was on the books for being first radio that established in Anatolian as mercantile radio in Gaziantep at 1991.

Kent FM which was established in June of 4 in 1992 at Istanbul was the first radio management who had a private capital. After 1992, the number of the radio management who has been active in Turkey has increased. From 1992 to now the number of the radio management is on thousand and the economic structure of the radio channel has shaped. At 2005 in Turkey the number of the radio who had a terrestrial radio license was 1090, this number had fell 1062 in 2010 and 1058 in 2012.

Table 1: The number of the Terrestrial Analog FM Radio who had been active between 2005 and 2012 in Turkey(resource: RTÜK)

Type of Terrestrial FM Radio License	The number of The Radio Companies(2005)	The number of The Radio Companies(2009)	The number of The Radio Companies(2012)
National Radio (R1)	36	35	38
Regional Radio (R2)	102	98	98
Local Radio (R3)	952	929	922
Total	1090	1062	1058

Radio Management Styles

Radios were managed differently at both of Turkey and around the world according to their field of activity and terms.Radios were managed differently at the different times according to structural functions in the society and political structures of the countries.Generally,there are two types of radio management:

Commercial Model

Commercial model was born in the capitalist system which has been since the establishment of the United States and today, it has already been. The first radio management at U.S.A was found by a special enterprise and developed fast. The purpose of the commercial model is to get more benefits. Firstly, radio market at U.S.A. was interested in radio receivers and the other commercial qualification of the other equipment and after then,it was interested in the sources of income which is got from the publishing. When Radio Publishing was developed, Radio Management started to clerk for goods and services in the commercial model by using advertisement. (Kocabaşoğlu, 1980:8).

In the commercial model, Transmitter-receiver, station and publishing time - which is more important than the others -are for sale and every one is a consumption goods. The main part of this step is advertisement income, so advertisements are the main part of the publishing. The other programs come after the advertisements. In a natural way,the economic structure affects content structure. (İlal, 1989:38). Radio Management which is managed with commercial model has no relationship with government and state except for general level. Special promoters can found and manage broadcast stations. Government makes general rules which are related with this topic.The promoters who obey legal and technic rules is given certificate for founding and managing the radio station.(Vural,1986:22-23).

Public Service Model

Public Service Model is a model which is developed and used in European Countries more.The Government or States in these European Countries have controlled the Radio Managements at the Public Service Model (Serarslan,1993:15-16):

-The opportunities of publishing, Network transmitter, studio or studio goods have been controlled by the government.
-The system is monopoly. All broadcasts are managed by only one government. Rival special enterprise has no station.
-Programs are made by one hand and they are sent to the other stations.
-Generally, broadcast is not commercial but a few countries have advertisement publishing to make money for budget outgoings.

-Income is provided from annual usage pay which is got from the government and radio receivers.

Table 2: Management of the public radio in Turkey

Radyo 1	TRT Antalya	TRT VOT East
TRT FM	TRT Çukurova	TRT VOT World
Radyo 3	TRT GAP Diyarbakır	TRT VOT West
Radyo 4	TRT Erzurum	TRT AvrupaFm
TRT Türk	TRT Trabzon	Polis Radyosu
TRT Nağme	TSR	Meteoroloji Radyosu
TRT Radyo Haber	TRT Radyo 6	

When we look at the radio management history, until 1992 in which commercial radios were developed, Radio Management exists according to public service model. Radio Managements have increased since 1992 in which commercial radios had started to broadcast and they have existed according to commercial model. In Turkey,commercial model which started after 1992 has changed all structure of Turk Radio System and it has affected management styles, relation with listeners,customers. This new movement has made radio broadcast be prepared according to request-offer for 21 years and they tried to increase listeners by integrating popular culture. Rating became important for radio managements who wanted to increase their listeners.

New Media

In English, Media is medium which means tool and media tool. In Turkısh, Media means mass communication. In a short way, means of mass communication help people learn about news, events. Nowadays, Media is television, radio and newspapers but because of fast technological developments and internet, social media, and new media come out. New Media is related with communication and cognition. This technology is called as new communication technology, too (Vuralve Bat, 2010 :3350).

Except for traditional communication tools, digital television, internet, GSM ,WAP, CD, VCD, DVD, interactive CD etc.are called as new media. (Törenli, 2005:88). New media can connect digital network and service multimedia to users. (Ekşioğlu, 2006:5).

New Media's affects to Radio Management

Radio listeners would rather use internet and new media tools than traditional styles. Listening to radio from the internet has increased 6 times in 10 years. (2003-2013).

Table 3: The rate of the listening to radio via internet last ten years (2003-2013)   (Resource: Edited fromIpsos KMG survey data)

Year	The number of the Listeners	Rate of Reach(%)
2003 January	219,219	1,15
2013 January	2,400,660	8,06

Table 4: The changes in the rate of listening to radio which happened in three big country via internet (2003-2013)(Resource: Edited from Ipsos KMG survey data)

	İstanbul	Ankara	İzmir
	Reach (%)	Reach (%)	Reach (%)
2003 First Quarter	1,12	1,69	1,26
2013 First Quarter	8,09	5,48	7,99
Change	+ 6,97	+ 3,79	+ 6,73

When we look at percentage of listening to radio from internet at 3 big cities,we can see that all cities have increased this percentage.The biggest one is İstanbul and the others are are İzmir and Ankara. The first listening radio survey which was made by RTÜRK in 2007 shows %18.1 listening to radio from new media.

Table 5: The style of the listening to radio (2007 – 2009) (Resource: It is edited from the data of the survey of the tendency of hearing the radio) (The total is over the hundred, because of the multiple answers)

Channel	2007	2009
Traditional (Classic) Radio	88.1	64.2
Satellite	8.4	14.5
İnternet	6.2	15
Mobile	5.5	18.6
Mp3/Walkman	4.5	7.6
Dvd/Vcd Home Systems	1.9	5.3

According to the survey of listening to radio trends which was made by RTÜK in 2010, people use new media to listening to radio in 2007,%18.1 people listen to radio by using new media and in 2009, this percentage happened %46.5. While there is an increasing on the

listening to the radio channels via new media, also there is a decrease which is 23.9% on the listening to the channels via traditional/Classic radio.
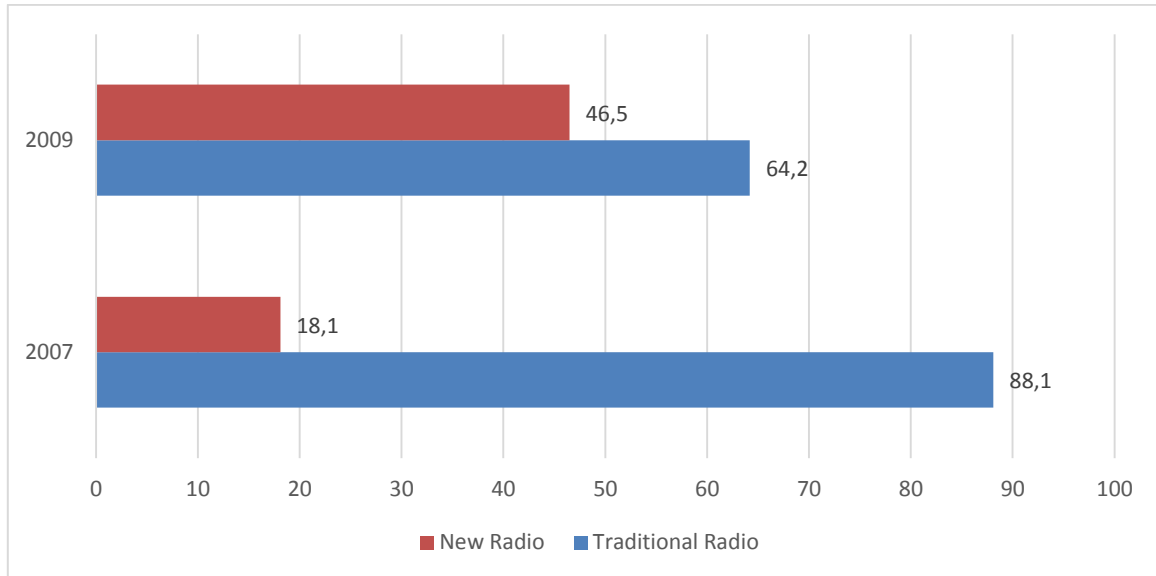

Figure 1: The exchange differences listening to the radio via Traditional Media and New Media (2007-2009)

Listening to radio by using new media has increased since 2007, but listening to radio by using traditional media has decreased. According to Turkey Internet Measurement in 2012, there were 24.913.169 internet users who were over 12 years old in 2011. According to this survey, at the November in 2011 listening radio by using Europe, it has increased from %20.72 to %25.93 (internet measurement survey 2012).

In 2013, this increasing of listening to radio by using new media has continued. According to IPSOS KMG survey which has measured habit of listening to radio in Turkey since 2003, with new media (internet,mp3, ı-pod and cell phone) listening to radio is at table 5.

Table 6: Changes of the radio channels listening rate via New Media (2011-2013)
Resource: Edited fromIpsos KMG survey data)

Year	Traditional(Classic) Radio	New Media
2011 January	27,82	15,99
2012 January	24,63	17.73
2013 January	21,53	18.16

After internet and new communication technology had developed, listeners gave up listening by using traditional ways and they started to use new media, so radio managements had to develop. Increasing in new media has affected radio management with 2 ways, economic and structural.

New Media's Economic Affects to Radio Managements

Because of the internet, traditional radio has lost its power. Although ınternet has increased its income by using advertisements, radio has not increased.

Table 7: Shares of the Radio Channels and New Media which they take from the advertisement payments (Resource: Association of Advertisers)

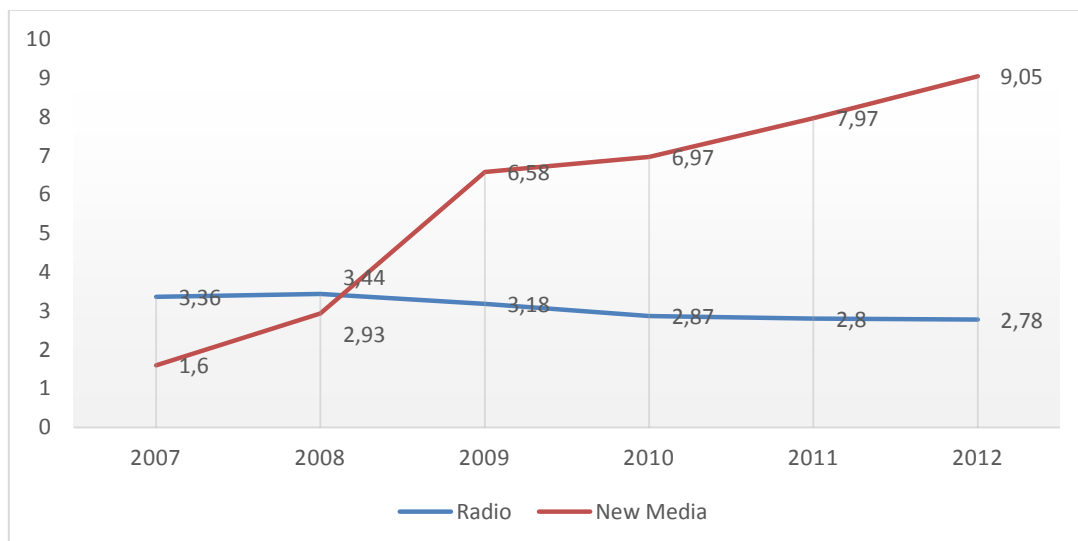| Year	Radio	New Media
2007	3.36	1.60
2008	3.44	2.93
2009	3.18	6.58
2010	2.87	6.97
2011	2.80	7.97
2012	2.78	9.05

Figure 2: Comparing of the shares which New media and Radio Channels take from the advertisement (2007-2012) (Resource: Association of Advertisers)

Advertisement has been affected because customers start to use internet and new media has been developed so new media is related with advertisement. In 2008, New media got ahead of

radio management. After 2008, New media started to increase its income by using advertisements but radio management was not luckier than new media.

Radio managements had to attract their listener back, so they had to become partners with new media.

The Effects of New Media toRadio Industry

New media affected radio industry's structure and it got variety to radio industry. After ınternet which was based on communication had developed, new technologic radios were added to traditional radio and they are;

Internet Radio

The first affect to radio of New Communication Technology was radio broadcast on the internet.There are two ways to do this.

Terrestrial Radio Broadcasts that are in the internet

These radios have broadcasted terrestrial publication and also internet. Advertisement Companies like these because they have both of them. (Ekşioğlu, 2006:62). Radio channel can reach geographically the places which it cannot reach with terrestrial broadcast is open to global access.

Only Internet Radios

The radio which make broadcasts only in new media take part in this group .These radio channels have no advantages in terrestrial broadcast but they do not have challenge because they have other advantages. (Ekşioğlu,2006:63). Internet radios are more reliable than terrestrial radios so they can attract advertisers.

Digital Radio (DAB) and HD Radio

As a result of the developments on field of new media technologies yet another innovation that attracts attention in the area of radio is digital audio radio. In 1992 World Administrative Radio Conference has confirmed a new frequency known as L-band which is used for digital radio transmission.New system has presented a clear sound quality that hardly has noise.

Canadian broadcasters and consumers have adopted this idea and now radio stations have been passing from AM and FM to L-band. (Can,1995: 55).

Digital Radio uses systems such as DAB(Digital Audio Broadcasting), DRM(Digital Radio Mondial) and HD Radio which are developed to take place of FM Radio broadcast.DAB broadcasts are separated two groups as Continental and from satellite.

Another numerical system defined as HD Radio is broadcasted through continental transmitting stations. Users that have HD radio support get a broadcast that has a better voice quality and more stations without any noise. Other users that haven't got HD Radio can only get standard analog broadcasts through AM and FM bands.Nowadays countries such as USA, China, Mexico, Switzerland use HD Radio system.(www.ibiquity.com)

DAB has transformed AM and FM to outmoded systems. Broadcasters have to invest in home and transportable digital music devices (such as CD,MP3,iPOD) as they have an increasing popularity. So DAB (mostly known as HD Radio) has threatened the continental radio stations, which broadcasts traditionally.

DAB (Digital Audio Broadcast) has been perceived as a threat by radio broadcasters. In an interview for on 23 July 1990 made with NAB vice president,Jon Abel said: "DAB is a threat and those who consider to take part in this job have to be very careful" and he had claimed this new technology would be unsuccessful (Keith, 2007: 30)

Developments on the HD Radio technology complete the radio with the new media and this threats the future of continental receivers by making them useless. In most of the countries (foremost USA) radio producers has put HD receivers on with reasonable and competitive prices, and also most of the car manufacturers added HD Radio to their new models and they supported the development of
In most of the meetings that are held first half of 2000s former president of NAB (National Association of Broadcasters) Eddie Fritts said "Transforming to digital will let radio to provide listeners more opportunities" and he claimed that HD Radio would be radio of future.

DAB broadcasting advantages to traditional broadcasts are listed below: (Ataman,2009:218).

- Easy programming choice that provides users to choose formats from a simple menu,

- Excellent receive that provides to stay on one station without changing it in the car,

- To unite music,data,video and graphics functions in one receiver,

- Information functions that provides to broadcast interactive functions such as weather forecast,cd,traffic and security data,

- To provide access to mobile receivers,PCs,and mobile phones and to exhibit a wide receiver option such as USB, digital camera,MP3 player,car radio, TV and cell phone.

Satellite Radio

Radio managements have acted with deliberation to the ever-shifting digital audio broadcasts which are provided by satellite. Even broadcasters have used satellite programming and network services for a long time in order to increase wireless continental signals,they didn't have a positive look on the idea of operating the radio stations that directly reach to the consumers.

Satellite Radio idea has been debated for a long time in USA. Some companies such as CD Radio and XM Satellite Radio have been issued license late years of 1990s. Xm Satellite began to broadcast in September 2001 and after a year it had approximately a quarter million of subscriber.Sirius Satellite Radio operating platform has been put on after less than one year when XM Satellite began to use audio broadcast.

Satellite Radio is salaried and offers a wide option that also includes most of the famous programing. XM Satellite Radio and Sirius,which are famous in this area worldwide, presents 120 radio stations to radio listeners. Beside 12.95dollar payment for countrywide signal transmission,subscribers also have to pay for receiver equipment. Both companies take aim at radio listeners to attract attentions on these platform radios from traditional radios by concluding agreements with car producers. Basis income of Radio Broadcasts that have the platform of Satellite radios have obtained by subscribe system. As of 2010 Satellite Radio platform subscribers in USA have reached to 10 million.

Nowadays cable companies provide home music services in order to increase listener audience and to gain listeners from traditional radio. For example; Comcast cable users can

reach music stations more than 50. That radio stations broadcasts nonstop and without advertisement,and they also present additional info that consists of music commentators,albums,songs. This kind of radio stations take advantage against traditional radio stations and steal their listener by these functions.

LPFM (Low Power FM)

LPFM has come up as a micro radio movement in 1990s. FCC President William Kennard has offered to form a regulation in order to legalize this little illegal market. He defended LPFM to be supported by citing from the disorder that emerges from the programming variations. The proposal of FCC (Federal Communications Commission) foresaw to obtain 2 new types of license on FM band. Band width is limited to 3 – 9 mil.10(LP10) to 100(LP100) watt power range are proposed to be used in service areas. FCC (Federal Communications Commission), LPFM necessitated license owners to be non-profit organizations. This rule put an end to the worry of commercial broadcasters who think new category stations will be competition threat for them.

InBand, On Channel (IBOC)

In 2002 U.S chose a methodwhichwascalled "in band on channelsystem" for the transition from the traditional FCC broadcast to digital radio. This system,which has the advantage that no one has to buy a new broadcast to listen a radio, gives radio broadcasting stations a chance to broadcast through the same channel at thesame time with both traditional analog system and digital system.With this new technology, consumers who purchase a new radio receiver have enjoyed the additional benefits of advanced digital signal.

Radio Data BroadcastingSystems. (RDBS)

Radio data broadcasting station systems send their messages of a maximum of eight characters. These messages can involve a song, the artist's name, background information, weather, traffic, or another data. Listeners who listen the radio environment in a digitalway can follow messages which are sent. InU.S. KISS-FM's engineering director Tom McGinley was wondering if anyone of the listener mass is awareof the text option. Thus and so with the station crew he sent a text message that announced the tenth person who calls the station is goingtowin a DVD player. As a result, people who read RDS data while listening a radio, in other words, people who do not listen by the standard analog radios, become aware of the

prize. This data transfer contributes a two-way communication between the listeners and the radio channel.

Enhanced Other Networks (EON)

A radio equipped with a RDBS receiver hardware, (radio data broadcasting systems) offers to pre-programming the stations in such a way that listeners preferred call letters or the type of music. In this system radio, If a weather alert is being broadcast or weather and traffic report is being given in any other station radio receiver can be programmed to stop the radio broadcast which is open at that time or even playing CD. This system can pop advertisements up in broadcasting in digital radio receivers and force the listeners in car to listen the advertisements

Conclusion

Changes in thenewmedia Technologies cause consumers' focus shifting from traditional media tone media. While, the ratio of reach to the radio corporations that conducting their activities in traditional way was % 27.82 in 2011 in 2013 this number dropped to% 21.53 as for the reach ratio of the radio corporations broadcasting via new media rose from % 15.99 to% 18.16 at the same time.

When the consumers' demands have been met with the channels created by the new media, the advertisers have moved in this direction and directed their advertisement investments from the traditional media to the new media. New media has increased its share in advertisement expenses through 2000s but radio stations has had a loss.Until 2009 the radio stations' share of the advertising revenue was significantly higher than the new media, this trend has changed in favor of the new media in next few years.

Shifting the consumers' trends and then the advertisers' investment from the traditional media to the new media has forced the radio stations broadcasting via traditional ways to change. İnstead of traditional forms, the radio stations has come under the obligation to broadcast via new media tools and radio corporations that couldn't invest in the new media have begun to experience difficulties in an economic sense. As a result of technological developments in the new media radio broadcasting has shifted to digital broadcasting and new forms of radio broadcasting have emerged. Digital radio broadcasting that referred as the future of

broadcasting and charmer of the listeners of the traditional radios has threatened the traditional radio corporations.

Conventional radio broadcasting period is just closed. Radio corporations have to understand the growing importance of new media via investing in the forms of broadcasting such as smartphone applications, digital radio broadcasting, and the internet and adapt to this area. So while radio corporations continue their terrestrial broadcasting, on the other hand they have to invest in the new media settings and carry on their broadcasting via those settings.

References

Abidin S, (2009). İzmir'deki Müzik Yayın Kuruluşlarında Karar Alma Mekanizmaları, Ege
    Üniversitesi .S.B.E., İzmir.

Arapoğlu N, (1994). Yerel Radyo Televizyonla ve Bir Örnek: İzmit, Marmara Üniversitesi
    S.B.E.,İstanbul.

Ataman Ö, (2009). Sayısal Çağda Sayısal Radyo Yayıncılığı. Selçuk Üniversitesi İletişim
Dergisi,(6),215.

Aysel A, (1989). Elektronik Yayıncılıkta Temel Bilgiler, TRT Basım ve Yayın Müdürlüğü,
Ankara.

Aysel A, (2002). Radyo Yayıncılığı, Nobel Yayıncılığı, Ankara.

Biçer F, (2008). Türk Medya Sektöründe Yabancı Yatırımlar ve Televizyon Alanında Bir
    ÖrnekOlay Çalışması, Marmara Üniversitesi S.B.E.

Binark M, (2007). Yeni medya Çalışmalarında Yeni Sorular ve Yöntem Sorumu, Dipnot ,
Ankara.

Byron A, (2005). Radi oto the MP3 Degree: Podcastig, (9 Şubat 2005), USA Today.

Collins R, (1998). From Satellite to Single New Communication Technology &European
    Public Service Television,Routledge, ABD.

Creech K, (1999). Electronic Media Law and Regulation, Focal Press, ABD.

Crisell A, (1994). Understanding Radio,Routledge, ABD.

Ekşioğlu Ş, (2006). İnternet Üzerinden Ses ve Görüntü Yayımcılığı, Marmara Üniversitesi
S.B.E., İstanbul.

Ertuğ H, (1969). Radyo İşletmeciliği ve Meseleleri, İ.Ü. Yayınları, İstanbul.

Gökçe D, (2004). Dijital Radyo Geliyor mu? http://www.ilef.net. (15 Şubat 2013).

Güllülü U, (1981). Türkiye'de Radyo Reklamcılığı, Radyonun Bölge Reklam Aracı Olarak
Kullanımına Bir Örnek: Erzurum Radyosu (1973-1978), Atatürk ÜniversitesiErzurum.

Güney S, (2007). Radyo Programcısı-Dinleyici İlişkisi: Programcı Dinleyici Açısından
    RadyodaÜretim, Marmara Üniversitesi S.B.E.,İstanbul.

Gürhani M, (2006). Devlet Radyosundan Özel Radyolara Geçiş Süreci ve Yayıncılıkta
    Yaşanan Değişimler. Gazi Üniversitesi Tezi, Ankara.

Habermas J, (1994). "Three Normative Models of Democracy", Constellations,(1),2.

Hendy D, (2000). Radio in the global age, Polity Press, ABD.

İAB, (2012). İnternet Ölçümleme Araştırması.

İlal E, (1989). Yığınsal iletişim Araçları ve Toplum, Der Yayınları, İstanbul.

İpsos KMG Radio Listening Research Reports, 2003-2013, İstanbul.

Kejanlıoğlu D, (2004). Türkiye'de Medyanın Dönüşümü, İmge KitabeviAnkara.

Kocabaşoğlu U, (1980). Şirket Telsizinden Devlet Radyosu'na ,A.Ü.S.B.F. Yayını, Ankara.

Kuşkonmaz S, (2008). Türkiye'de Radyo Televizyon ve İnternet Yayıncılığında Hukuksal
        Durum, Marmara Üniversitesi, İstanbul

Maliye Bakanlığı, (1979). Kamu İktisadi Teşebbüsleri ve İştirakleri Yıllığı, Ankara.

McQuail D, (1987). Mass Communication Theory, Sage, İngiltere.

Müge N, (2006). Devlet Radyosundan Özel Radyolara Geçiş Süreci ve Yayıncılıkta Yaşanan
Değişimler, Gazi Üniversitesi, S.B.E., Ankara.

Oskay Ü, (1992). İletişim abc'si, Simavi Yayınları,İstanbul.

Patterson J. & Melcher R, (1998). Audio on the web:The official IUMA Guide,
Peachpit Press,Kanada.

Priestman C, (2006). Web Radio: Radio Production for Internet Streaming, Focal Press, ABD.

Radyo Tarihi, (2007). Ratem Dergisi, (3),2

Reuters, (2005). Clear Channel Overhauls its Net Strategy,http://www.CNET News.com ,
        24.03.2004

Serarsalan M, (1993). Radyo Televizyon Düzenine Değişimler Arayışlar ve Türkiye, Yüksek
        Lisans Tezi, Marmara Üniversitesi S.B.E., İstanbul.

Serim Ö, (2007). Türk Televizyon Tarihi 1953-2006, Epsilon Yayıncılık,İstanbul.

Tekinalp Ş, (2003). Radyo ve Televizyon, Der Yayınları, İstanbul.

Toraman C, (2006). Türk Hukukunda Radyo ve TV Yoluyla Kişilik Haklarının İhlali ve
        Korunması. Marmara Üniversitesi S.B.E. Yüksek Lisans Tezi.

Törenli N, (2005). Yeni Medya Yeni İletişim Ortamı, Bilim ve Sanat Yayınları, Ankara.Türk
        S, Radyo ve Yeni Medya, İletişim ve Sosyal Araştırmalar Derneği, İstanbul.

Ülkü E, (1998). Türkiye'de Radyo Yayıncılığının Gelişim Süreci, İstanbul.

Vural B et al. (2010). Yeni Bir İletişim Ortamı Olarak Sosyal Medya: Ege Üniversitesi
        İletişimFakültesine Yönelik Bir Araştırma, Yasar Üniversitesi Dergisi, (20),3348-
        3382.

Vural S, (1986). Radyo Televizyon Kurumlarında Yönetim ve Türkiye'deki Uygulama,
        A.Ö.F.Yayınları, Eskişehir.

Wilby & Conroy P, (1994). The Radio Handbook, Routledge, ABD.