

# Development of Internet Television Broadcasting and Satisfaction in Internet Broadcasting

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## Abstract

*Television and broadcasting technology has been constantly developing and renewing since its discovery. When developments in electronic and internet infrastructure were added to these developments, a new process emerged in television broadcasting. These systems, called IPTV or Internet TV, have become global systems with millions of members worldwide. Members can watch TV series, documentaries and movies as much as they want, wherever and whenever they want, on all screens connected to the internet. It can play, stop, and continue watching broadcasts at any time. In this study, the possibilities of Internet TV broadcasting are examined in various aspects and satisfaction research is conducted for Netflix users. The purpose of the study is to measure the overall satisfaction of people who are members of Netflix. Questionnaire Method was used to obtain data in the research. The questionnaire consists of 15 questions and was developed by the researcher. The universe of the research is students of Akdeniz University, Faculty of Communication in Turkey Its sample is 89 students representing the universe. The students were determined by the Easy Sampling method. SPSS statistics program was used to analyze the obtained data. Reliability test, Independent t test, anova test, frequency, percentage and average scores were used to evaluate the data.*

**Keywords:** Internet Broadcasting, Netflix, Films and Series, Satisfaction.

## Introduction

The invention of the internet, which is a product of developing digital technologies, and becoming an important mass media is one of the most important developments in the field of mass communication. Thanks to the Internet, McLuhan's "global village theory" took place in our era and a global communication environment has been created and these developments have brought digital media. Digital technologies have dominated all social life. Internet and mobile phones have become indispensable elements of daily life. Today, people watch television, movies and series on the internet.

Digital technologies, which are thought to open a new era especially in mass communication, have had a great impact in the field of broadcasting. Today, digital publishing has become extremely popular and stands out compared to other communication tools and methods. Evolving digital publishing enables

information to reach audiences in different places within a very short period of time with very little cost.

In today's digital age, television is changing. Technical developments as, for instance, the Internet, broadband, satellite and fiberglass cable as well as laptops, tablets and other portable TV devices offer new ways of accessing and watching television. This means that watching television is not restricted to a schedule with programs of a certain length that can only be accessed on a classic TV set anymore. Instead, the content is available everywhere and at any time and the options of accessing it are increasing (Einav and Carey 2009 115-116).

Thanks to the developing technologies today, television broadcasts and various other media services can now be offered to the audience subscribed to the system over the internet network.

Communication environments around the world are uniting under the internet infrastructure. This situation has developed the broadcasting system that broadcasts over the internet infrastructure, and companies that broadcast series, movies and documentaries have emerged worldwide. Founded in 1997, *Netflix* started as a DVD rental service. Today, it is the leading subscription service provider for on-demand Internet streaming of movies and TV shows and offers its service in more and more countries worldwide. Subscribers of *Netflix* have to pay a monthly fee in order to get unrestricted access to the provided content (Ziska 2015). In this study, the possibilities of digital broadcasting are examined in various aspects and satisfaction research is conducted for Netflix users.

## Digital Broadcasting

The Internet is a large computer network that connects many existing computer networks in a common language. Thanks to this network, sharing information from long distances has become as easy as ringing a phone. Jobs that used to take days, weeks, or even months now only take minutes. The Internet is on the way to becoming a completely different world with new channels, applications and growing number of users developed every day. With the establishment of the Internet structure, the concept of 'New Media' has emerged and developed. The concept of new media has a wide coverage. "New media, which includes all of the new communication technologies; it can be defined as the media that direct the existing media to convert them into digital data interactively and provide production, distribution and sharing through computers" (Kirik 2017, 232). While

the new media sits on the internet floor, it integrates with digital technologies.

In the internet-connected world, it's almost expected that any form of entertainment (movies, TV shows, sports, music, etc.) is available anytime, anywhere, and on any device. We're in the midst of a significant change in the way we consume content (Govind 2015, 1).

As stated at the beginning, the digital age impacts television. Technical developments create new ways of watching television so that television is not restricted to a static program schedule only accessible via a classic TV set anymore. As the options of access are increasing, the content becomes more and more available everywhere and at any time (Einav and Carey 2009, 115-116).

With the application of digital technique in broadcasting and with traditional media are moved to new media, we can talk about the convergence of telecommunication, computer systems and broadcasting. Convergence; telecommunication technologies, data communication and mass communication have been integrated and a new media environment has been created. Digitization and convergence enabled the integration of communication areas with each other, causing the change of traditional communication environments and the emergence of new communication environments that have not existed until now (Yaman 2017, 246).

Broadcasters operating in this area have reduced the bandwidth they use for streaming. Therefore, this situation caused the rents they paid to the satellite to drop 4 to 8 times. As digital broadcasts have a lower quality loss during transfer or distribution than analog broadcasts, transmission and distribution costs have decreased and more distances have been achieved more economically (Sirma 2013, 38). Digital publishing has many advantages. These;

It is more reliable.

Circuits and systems can be repeated exactly.

Signal quality does not change.

This quality can be done as well as desired.

It can be integrated widely.

It is very little affected by noise and external influences.

It is cheaper (in many applications).

Television and computer systems combine under the name of multimedia and turn into a single system (Morgul 1998, 11).

The developing technology sector continues to make different inventions. With the steps taken to facilitate daily life, user-oriented ideas, once described as dreams come true. The technology that enables television to join the wireless network has made great progress in digital publishing development after it was added to the television.

It is possible to gather digital television broadcasting technologies under 4 main headings: Terrestrial digital broadcasting (DVB-T), satellite broadcasting (DVB-S), cable television broadcasting (DVB-C) and internet television broadcasting and (IPTV) (Yaman 2017, 249).

IPTV, an internet-based broadcasting system, is a brand new broadcasting technology that has evolved

with the 2000s. IPTV, which is still continuing its development; It is defined as "transmitting encrypted, unencrypted TV channels and stored video contents to IP packets and delivering them to the end user via broadband access technologies" (Taşkın 2008, 41).

IPTV, encrypted or unencrypted radio, television, data channels, stored video, audio and data content is converted into IP (Internet Protocol) packages and broadcast to the end user over broadband access technologies. In addition, IPTV includes the meaning that TV services can be used by mobile phones, computers, and also television via digital boxes. In other words, this means that the mobile phone, computer and television screen that appear as three different communication tools come together with a common broadcast understanding and common services (Tasci et al. 2012, 3).

Digital publishing, which offers multiple language options, realizes this thanks to its standards, while providing instant interactive applications and subtitle support. Contrary to digital television and analog signal, even when in motion, television broadcasting can be achieved at the lowest level data loss (Sirma 2013, 38).

IPTV actually works very simply. Instead of watching the broadcast by receiving a signal from a roof antenna, satellite dish, it provides the opportunity to watch the broadcast by receiving the signals via an internet connection. However, the important point here is that the broadcaster needs to digitally store pre-recorded programs, series and movies. Programs have different recording types such as MPEG2 and MPEG4. MPEG4 is a new compression method used for bandwidth and quality image transfer. The next step is for the TV to go on the Internet and open the files in digital form.

Thanks to the spread of broadband, reaching higher speeds and the development of digital image compression techniques, content produced anywhere in the world can be accessed through the servers where they are stored. As a result of these developments, the package services consisting of high-speed internet, telephone and TV packages and called triplets have been widely offered to the users. Digiturk, Dsmart, Tivibu Satellite, Teledünya and Superonline can be shown as examples of IPTV with millions of subscribers in our country. There are also international broadcasting organizations. An example of this is Netflix.

Netflix, which began as a DVD mail distribution service, did not have its subscription digital streaming service until 2007. Today, Netflix and other legal streaming services have established Netflix and other legal streaming services have established a clear business model and technological infrastructure that caters perfectly to socially connected Millennials, whose binge-watching habits have been labeled "The Netflix effect". For example, as of March 2018, Netflix now has 117 million members. More importantly, these subscriptions to these authorized streaming services are of high-quality, reliable, and relatively inexpensive (Nhan et al. 2020, 1).

Netflix can be watched from many platforms. Besides the Windows Phone, Android and iOS

applications, there are Netflix application on Smart TVs, PS4, Tablets, PCs and Apple TV. Netflix broadcasts regionally as per copyright agreements (Sezer, doc.1)

According to McRae "television is not 'television' anymore. It is a complex and rapidly developing medium that is moving from a space defined by broadcast to one struggling for interactivity, mobility and digital convergence". The advancing digital technologies cause transformations in content and form of television. This results in new innovations as online video content, mobile devices and interactive digital television (Mcrae 2006,1).

Since the foundation of Netflix and its DVD rental service, the personalization of its website and content became more and more important. In relation to this, Neil Hunt, Chief Product Officer of Netflix, explained in his speech during the Internet Week New York 2014 that "Internet TV is personalized TV". According to Hunt, Netflix does not aim to offer the user a list of titles but "one or two perfect suggestions that perfectly capture what you want to watch right now depending on your mood and who is with you". In the course of this development, it is the company's vision to create an individual channel for every single person (Ziska 2015).

Netflix says it struggles with video piracy; video piracy is a substantial competitor for entertainment time in many international markets. It is free and suggests very broad selection. Great inexpensive services like Netflix will hopefully help insulate video from piracy. Another effort of Netflix is to prevent a video piracy by adopting an inexpensive policy (Netflix 2015).

**Method**

Netflix is a company that has 183 million subscribers in more than 190 countries and transmits its broadcasts such as documentaries, series and movies to its members over the internet. Members can watch the broadcasts as much as they want, whenever they want and wherever they want on any screen connected to the internet. The extent to how much Netflix members are satisfied with this service is the subject of the research. The universe of this study is the students of Akdeniz University, Faculty of Communication, which has about 900 people. From this universe, 89 samples from Netflix members were taken with the Total Count Sampling method. The research is restricted to Akdeniz University Faculty of Communication students only. The satisfaction question, which includes 5 demographic and 15 suggestions for collecting data in the research, was prepared by the researcher. The survey was applied to the students on the internet in April 2020.

**Findings**

	<b>Cronbach Alfa Reliability Coefficient</b>
21 Items	0,71

Table 1. Reliability Coefficient

Expert validity of the questionnaire was provided. Also, Cronbach's Alpha value was calculated for the reliability of the questionnaire. Cronbach's Alpha was found as  $\bar{X} = 0.65$ . This value reveals that the survey is reliable.

	<b>Frequency</b>	<b>Percent</b>
Radio Television and Cinema	23	25,8
Journalism	31	34,8
Public Relations and Publicity	23	25,8
Advertising	12	13,5
Total	89	100,0

Table 2. Departments of the Students Participating in the Research

The departments of the students participating in the research are shown in Table 2. 25.8% of students are from Radio Television and Cinema, 34.8% of Journalism, 25.8% of Public Relations and Publicity, 13.5% of Advertising.

	<b>Frequency</b>	<b>Percent</b>
Woman	46	51,7
Man	43	48,3
Total	89	100,0

Table 3. Gender of the Students Participating in the Research

Table 3 shows the distribution of students participating in the research. 51.7% of the students are women and 48.3% are men.

	<b>Frequency</b>	<b>Percent</b>
No Other Platform	62	69,7
Blue TV	12	13,5
Amozon Prime	3	3,4
Puhu TV	5	5,6
Digiturk	2	2,2
Bein Connect	4	4,5
More TV	1	1,1
Total	89	100,0

Table 4. The Platforms that Subscribed Other than Netflix

The platforms that the students participating in the research subscribe to, other than Netflix, are shown in Table 4. Accordingly, 69.7% of students have no subscription other than Netflix. 13.5% of students subscribe to Blue TV, 3.4% Amozon Prime subscription, 5.6% Puhu TV, 2.2% Digitürk, 4.5% Bien Connect, 1%, 1 of them has More TV subscriptions.

	Frequency	Percent
1-5	71	79,8
6-10	10	11,2
11-15	2	2,2
16-20	3	3,4
21 and more	3	3,4
Total	89	100,0

Table 5. Number of Movies Watched Weekly

Table 5 shows the number of films watched by students who participated in the research. Accordingly, it is seen that the students watch movies mostly in the range of 1-5 and secondly in the range of 6-10. The percentage of other ranges is extremely low.

	Frequency	Percent
1-5	78	87,6
6-10	7	7,9
11-15	1	1,1
16-20	2	2,2
21 and more	1	1,1
Total	89	100,0

Table 6. Number of TV Series Watched Weekly

87.6% of the students participating in the study are watching TV series between 1-5, and 7.9% of them are between 6-10. The percentage of other ranges appears to be extremely low.

	Mean	Std. Deviation
Watching movies and series with Netflix is useful.	4,3146	,80616
I decide more easily on the movies or TV series I watch with Netflix.	3,7640	1,06624
Channel transition speed of Netflix is good.	4,0562	,85758
I spend more time in front of TV with Netflix.	3,3933	1,38677
Netflix streaming is higher than other alternatives.	4,2135	,80442
I don't get stuck watching HD on Netflix.	4,1236	,88959
Film and TV series quality of Netflix is sufficient.	3,7416	,93576

The number of movies and TV series of Netflix is sufficient.	3,0787	1,18920
The monthly fee I pay for Netflix is very high.	3,0225	1,20583
It took a long time to learn how to use Netflix.	1,3258	,59877
I think I spent more than enough time and effort to take any action on Netflix.	1,6966	,89702
Using Netflix was useful to me.	3,9888	,83250
The services that Netflix provides me are better than I expected.	3,6742	,87614
From an overall perspective, Netflix met all my expectations.	3,6067	,99565
I am thinking of continuing to use Netflix.	4,3596	,88224

Table 7. Netflix Satisfaction

A great majority (88.8%) of the participants in the research think that "Watching movies and TV series with Netflix is useful" and this idea has a 4.31 average. The ratio of those who think "I can decide more easily on the TV show or movie with Netflix" is 65.2%. 14.6% students do not agree with this idea. Participation in the idea of 'Netflix's channel transition speed is good' is extremely high ( $\bar{X}=4.05$ ). However, 4.5% of users are not satisfied with the transition speed. The average score of "I spend more time in front of television with Netflix" is  $\bar{X}=3.39$ . When the participation status is examined in detail; the total I disagree and strongly disagree is 29.2%. I agree and strongly agree, the sum is 55.6. From this point of view, it can be said that Netflix is effective for people spending time in front of television. Participation in the idea of "Netflix streaming is higher than other alternatives" is extremely high. Netflix streaming quality appears to be good. It is seen that the average of 'I do not get stuck watching HD streaming on Netflix' is = 4.12. Therefore, it is understood that there are no pauses and stutters on the broadcast. 6.7% of students may have had problems due to the low internet speed. The average score of 'Netflix's movie and TV quality is sufficient' is 3.74. Considering the participation details, 2.2% of the students strongly disagree, 6.7% disagree, 25.8% neither agree nor disagree, 44.9% agree, 20.2% strongly agree. According to this, it can be said that Netflix has high quality movies and series. It is seen that the average score ( $\bar{X}=3.07$ ) is low when the idea of "Netflix's number of movies and series is sufficient" is considered. Netflix needs to increase the number of series and movies. The ratio of those who disagree and agree with the "I have a very high monthly fee for Netflix" judgment is almost equal. It is seen that the average score ( $\bar{X}=3.02$ ) is not high. So the monthly fee paid to Netflix is not too high, but not

low. Participation in the thought 'It took a long time to learn how to use Netflix' ( $\bar{X}=1.32$ ) is extremely low. It is gratifying that such problems have been reduced to a minimum during the time of the information society. However, for people who have such problems, it would be good to provide easier use of the interface and to have educational and instructive instructions. The average score ( $\bar{X}=1.69$ ) of 'I spend more time and effort to do anything on Netflix' is also extremely low. It can be said that Netflix is easy to use. It appears that the average score ( $\bar{X}=3.98$ ) for 'using Netflix was beneficial for me'. It is appreciated that Netflix is beneficial to people. Participation in the thoughts of 'Netflix's services provided to me is better than I expected' and 'From a general perspective, Netflix has met all my expectations' is almost equal. When the participation is analyzed in detail, the total of the students agree and strongly agree is 60.6%. Accordingly, Netflix provides service beyond expectations. But providing people with as much service as they expect is a success too. Participation in the 'I think of continuing to use Netflix' is at a high ( $\bar{X}= 4.35$ ) level.

Gender	N	Mean	Std. Deviation	t	P
Female	46	3,4797	,50099	-,220	0,82
Male	43	3,5023	,46878		

Table 8. Satisfaction According to Gender

Independent Samples t-test analysis was carried out to determine whether the satisfaction of the students participating in the research differed from Netflix according to their gender. However, no significant difference was found according to gender. It is seen that the average score of men ( $\bar{X}= 3.50$ ) is almost close to the average score of women ( $\bar{X}= 3.47$ ).

	Sum of Squares	df	Mean Square	F	P
Between Groups	,002	3	,001	,003	1,00
Within Groups	20,533	85	,242		
Total	20,536	88			

Table 9. Satisfaction According to Departments

	N	Mean
Radio Television and Cinema	23	3,4928
Journalism	31	3,4925
Public Relations and Publicity	23	3,4928
Advertising	12	3,4778
Total	89	3,4906

Table 10. Average Satisfaction of Departments

Table 9 shows whether there is a differentiation in satisfaction of the students participating in the research according to their departments. One Way Anova test was applied to detect differentiation. According to the test result, satisfaction ( $p> 0.05$ ) does not differ according to the department in which the students study. In addition, as can be seen from Table 10, the average of the departments was found to be almost the same.

## Results

In the digital age, where new developments are constantly taking place, the world of television and film is also affected by the developments. Digital publishing innovations have brought a new dimension to the world of television and film. It is predicted that the television technology of the future will be largely created by IPTVs. As a result of the development of internet technologies, offering a wider bandwidth and increasing speed, IP-based broadcasting has become widespread. It is a very interesting feature to watch programs, series, movies and documentaries with high quality whenever desired. Also, offering different language options increases the attraction in the globalizing world. Therefore, the structure of TV broadcasting will also change in the future.

According to the research results; Students find watching movies and TV shows and channel switching speed useful with Netflix. It can be said that Netflix is effective in spending time in front of television. Students think Netflix is better quality than other alternatives. The students participating in the research think that they do not get stuck watching HD broadcasts and that the movie and TV series quality of Netflix are sufficient in general. However, the percentage of students who think Netflix's number of movies and series is not high enough. If Netflix increases the number of movies and series, it will increase the satisfaction. It can be said that the monthly fee paid for Netflix is neither too high nor too low. Opinions on this issue are neutral. According to the research, it does not take long to learn how to use Netflix and to take any action. Adaptation to new technologies is short due to the structure of the information society. Students benefit from the use of Netflix and Netflix is at a level that meets students' expectations. Due to the fulfillment of the expectations, most of the students are thinking of continuing to use Netflix.

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