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## Pricing Strategies of Internet VOD Services And its Impact on the Television Viewing in Korea<sup>1</sup>

(A summary)

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### 1. Introduction

Video-on-demand has been the ultimate goal of the TV or movie fans; watching a show in the living room at the convenience of pushing a few remote control buttons. However, VOD services through cable or the internet has been slow in adoption, mostly due to economic reasons. Since encryption technology is essential as well as good and fast programming, it has been too costly for the new technology to be adopted universally (New York Times, 2002). In addition, there were also demand-side reasons. Recently there has been an increase in the VOD services via the internet, partly due to the critical cut in costs. In this study, we focus on the internet VOD market that is rapidly increasing the viewer base.

In the US, most internet VOD services started out with alliance with the major studios that have a vast library of video content. The key digital aggregators such as Movielink, MovieBeam and CinemaNow are testing a diverse range of options to figure out the optimal services that does not cannibalize existing movie distribution platforms.

Yankee Group identifies four types of VOD services and the drawbacks of each category - Internet, cable, satellite and telco (Yankee Group, 2002). Of them, internet VOD typically is

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<sup>1</sup> This paper is a summary of the results of the study, and is not final. Please consult the authors before citing.

aimed at embracing the potential file-sharing possibilities similar to that of Napster. It is also driven by the decline in the post-box office revenues due to DVD. Thus it has a somewhat different development path from other VOD services.

In Korea, internet VOD services were started by the major broadcast networks, KBS, SBS and MBC. It was at first regarded as a complimentary service that broadcasters could provide to their loyal viewers. However, broadband penetration increased rapidly in the recent years and so had the market for internet VOD services. Except for the public broadcaster KBS which takes receiving fees as main financial resources, broadcasters quickly switched their formerly free services to pay services.

Web-based VOD market is still at its initial stage and the size of the market is tiny compared to the packaged video market. However, this new emerging market has potentials to change the whole video consumption pattern. This study aims to examine the patterns of web-based VOD viewing and compare it with the over-the-air broadcast viewing patterns. We aim at answering the questions; Are internet VOD services complementary goods or substitutes for television viewing? How does internet VOD affect the original broadcast viewing patterns?

Broadband internet connection represents a strong market growth for VOD services (Europemedia, 2002). This was the case for the Korean broadband VOD market. Broadband services in Korea exceeded 10 million households in 2003. This means that over 70% of the households get access to the internet via broadband services such as DSL or cable modem. Of the internet usage households, 96.7% use broadband services (KNIC, 2003). According to a survey conducted by KISDI (2004), among internet users over the age of 15, only 20.1% have ever used pay services on the internet. The highest category was music (70.8%), news and information (67.3%) and movies and TV programs (54.5%). The average expenditure was 17,700 won (approximately 15 USD) per month per user. But as the penetration of broadband services is reaching the saturation point, the pay services on the internet is growing accordingly. In 2002, pay services exceeded 156 trillion won, which is a 56% increase from the previous year (Korea IT Industry Promotion Agency, 2003).

There are several hundreds of internet VOD service sites in Korea. Most of them are music sites or adult movie sites. However, those sites are very limited in regards to the number of subscribers or viewers and the quality of content that are provided. The VOD sites that are successful are run by the major broadcasters, KBS, MBC and SBS. The internet sites of these major broadcast networks provide real-time news and radio shows as well as VOD services for dramas, sitcoms, variety shows and documentaries, the most popular being drama reruns.

Table 1. Internet VOD services of the three major broadcasters

	<b>KBSi</b>	<b>iMBC</b>	<b>SBSi</b>
Parent company	Korea Broadcasting System (KBS)	Munwha Broadcasting Company (MBC)	Seoul Broadcasting System (SBS)
Established	April 2000	March 2000	Aug 1999
# of employees	Approx. 150	80	83
Download fee	Free of charge	500 won (approx 35 cents) per viewing	500 won/ 1000won (approx 35c/70c) per viewing
Other		Switched to pay services on April 2003	Switched to pay services on Sep 2001/ IPO Feb 2003

Television programs can be characterized by their unique distribution method. Price discrimination strategy takes place not only in geographical market but also in temporal market. This is often labeled as the “intertemporal intermedia flow of media products (Wildman, 1994)”, in which one-way flow occurs throughout the downstream market. It is also called the “windowing effects in media economics literature (Owen & Wildman, 1992)”, where media content is distributed from one channel to another within a certain time frame.

While over-the-air broadcast television is one of the downstream markets for theatrical movies, it also has an independent downstream market of its own. Most of the programming on TV starts out on over-the-air broadcast TV and go on later to other distribution markets. Dramas, sitcoms and some entertainment and information shows often appear on the cable channels after their first-run on broadcast television<sup>2</sup>.

It is important to note that distribution channels or windows affect each other in several ways. For instance, a television program's time position on the downstream will affect the size of audience of the other distribution channels. If the TV show is shown on internet VOD or cable channels too quickly, then it could decrease the broadcast viewers. On the other hand, if the show is released later then viewers may be inclined to watch the original broadcast. Thus, it is a trade off between the holdback term and the performance in each market. This is especially so in the case where the viewer has to pay for a certain service. Cable television is already subscription based and internet VOD services are increasingly becoming so.

In this study, we explore the pattern of internet VOD viewing and compare the trend with the original television broadcasts to figure out what functions the VOD services are currently serving. Since the services are in its initial stages, we may not reach an obvious conclusion. However, it would be meaningful to provide basis for discussion on what new technologies and new distribution methods changes the existing markets.

<sup>2</sup> Due to the unique market structure, local television markets do not serve as a significant aftermarket in Korea.

## 2. Research questions and Method

Internet VOD services started out as a free service provided by the major broadcasters for their loyal viewers. It was used to attract more traffic on their internet sites where there is information on their TV and radio shows. Since the websites rely on advertising for revenues, attracting more users were critical to the profitability of the sites. When the broadcasters found out that the users were increasingly downloading and viewing VOD services, they switched the free services into a pay service quickly accruing additional revenues from the new paid services. The viewer pays a small fee of approximately 35 cents to 70 cents per episode and he or she can view the purchased episode within a certain amount of time frame, usually 3 hours. Most of the VOD viewing was heavily geared towards dramas and sitcoms. One of the major broadcasters, MBC, suggested that their TV ratings were dropping due to their free internet services. Viewers would watch MBC's competitor SBS's drama on TV because SBS had already switched to pay services, while MBC's content was free. Thus, viewers will choose to watch SBS TV show when faced with a choice between MBC and SBS, because they would anticipate that they could watch MBC's show free of charge on the internet later. However, this claim was never empirically tested. We aim to examine the effects of this change in billing policy of the major broadcasters and also how this affected the original viewing on the broadcast networks. The research questions are set up as follows;

**Research Question 1.** What are the effects of internet VOD services on original broadcast viewing patterns?

**Research Question 2.** What are VOD viewing patterns for different types of dramas?

**Research Question 3.** Are internet VOD services complementary goods or substitutes for over-the-air broadcast television?

### 2) Method and Data

(1)TNS TV ratings data

We obtained ratings data for each episode of all dramas broadcast between March 2-10, April 4-13, May 6-12 2003. The reason for getting three separate terms was because MBC started pay services on April 2, 2003. So we could project any change in patterns comparing the three different periods. A total list of 312 dramas that aired during the period was compiled. Of them 223 that were aired continuously across the three periods, was used as the final dataset. Dramas

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were categorized into weekly miniseries (usually aired on two weekdays), weekend miniseries (aired on weekends), morning soap operas (daily) and evening soap operas (daily).

(2) Internet VOD download and playback data<sup>3</sup>

We then compiled the playback data for dramas that are rerun on internet VOD service sites. We could not obtain data from iMBC and SBSi which are the two major broadcast companies that provide pay services. KBSi is a branch of KBS the largest public broadcaster in Korea. KBS is the only major broadcaster that provides free internet VOD services for network programs. With the data obtained from KBSi we could indirectly gauge the viewing pattern changes of television viewers. For the dramas serviced on KBSi, we obtained cumulative playback data for each title. Unfortunately, playback data for each episode was not available. For KBSi dramas we listed a total of 96 playback records.

Table 2. Dramas included in the dataset

Genre	Channel				Total
	MBC	KBS1	KBS2	SBS	
miniseries_weekly	0	0	14	14	28
miniseries_weekend	9	6	12	20	47
soap opera_morning	18	18	21	18	75
soap opera_evening	15	18	16	24	73
Total	42	42	63	76	223

### 3. Results

#### 1) Effects of internet VOD services on original broadcast viewing patterns

The ratings before and after the new pay services of iMBC were compared. We analyzed the ratings right after billing and also one month after to see the real effects. On the whole, there weren't dramatic differences in the ratings after pay services. We categorized dramas into four groups depending on the time aired and also what day the programs are broadcast. Ratings change occurred in the case of morning soap operas for MBC and KBS1. For MBC, the ratings of morning soap operas increased one month after they started billing. Dramas on KBS1 dropped from 20.25 to 12.62 during the two months period. These two categories were the only type of shows that had significant changes in ratings.

<sup>3</sup> We could not obtain data from iMBC before and after the pricing strategy had been changed. Both SBSi and iMBC were very cautious in opening up their numbers, which was not the case prior to the change in their pricing policy. So this was quite unexpected when we started out this study. We could only obtain playback data from KBSi, which is still providing free - of - charge service.

We could also see a slight decrease in the average ratings of SBS weekly miniseries. Regarding that weekly miniseries are most popular among teenagers and viewers in their early 20s, this may have some correlation to their viewing behavior on the internet.

Since MBC's miniseries discontinued during the period when the services were switched to pay service in April, we cannot directly compare the ratings change before and after.

As stated above, there was only a minimal influence on the change in the behavior of over-the-air broadcast viewers. Thus, we cannot say that switching to pay services affected the original broadcast viewing nor is it serving a substitute function for over-the-air broadcast TV.

Table 3. Comparison of TV drama household ratings before and after internet VOD pay services

Channel	Genre	During free service		Immediately following change		One month after switching to pay		df	F	sig.
		M	SD	M	SD	M	SD			
MBC	miniseries_weekly	.	.	.	.	.	.	.	.	.
	miniseries_weekend	12.400	3.386	10.366	3.308	10.266	4.259	8	0.322	0.737
	soap opera_morning	14.483	1.007	12.683	0.804	<b>16.667</b>	1.633	17	16.556	0.000
	soap opera_evening	39.240	2.816	37.160	1.986	36.240	2.648	14	1.876	0.195
KBS1	miniseries_weekly	.	.	.	.	.	.	.	.	.
	miniseries_weekend	19.550	2.333	17.250	0.636	15.250	0.071	5	4.745	0.118
	soap opera_morning	<b>20.250</b>	1.099	17.917	1.356	12.617	1.589	17	49.442	0.000
	soap opera_evening	14.000	3.480	14.817	3.880	16.083	5.078	17	0.375	0.694
KBS2	miniseries_weekly	11.583	10.853	15.025	5.368	16.800	8.320	13	0.439	0.655
	miniseries_weekend	15.225	9.886	14.900	8.929	15.750	11.184	11	0.007	0.993
	soap opera_morning	8.086	1.316	8.500	0.693	9.600	1.484	20	2.913	0.080
	soap opera_evening	5.920	1.802	6.220	0.650	6.783	2.862	15	0.249	0.783
SBS	miniseries_weekly	21.167	14.699	12.125	9.859	10.375	7.963	13	1.209	0.335
	miniseries_weekend	17.433	8.065	15.667	5.572	13.838	6.585	19	0.484	0.624
	soap opera_morning	13.383	1.061	13.667	0.609	14.200	0.965	17	1.275	0.308
	soap opera_evening	7.170	3.844	7.071	3.734	9.900	4.165	23	1.247	0.308

## 2) VOD viewing patterns for dramas

We then analyzed the patterns of internet VOD viewing behavior on KBSi. Click frequency for each title was analyzed for 7 days after the original broadcast on KBS1 and KBS2. On average the frequency of viewing on the internet was the highest on the day right after the original broadcast on TV. Then it decreased somewhat during the next 5 days and increased again on the 7th day. This pattern was more distinct in the case of miniseries, for both weekdays and weekends.

This pattern reinforces the results in the previous section that internet VOD viewing is more of a complementary service to broadcast television. People who missed an episode will be inclined to watch the show on VOD services within a few days of broadcast and also right before the next episode. Miniseries are scheduled two nights consecutively on weekdays or weekends. So people who watch Monday-Tuesday miniseries will watch internet VOD on either Wednesday/Thursday or on Sunday the day right before the next episode will be broadcast. That way, the viewer can catch up with the story. This pattern is less obvious in the case of daily soap operas. Since we do not have information on each individual episode, we cannot say for sure that this is because episode watching is spread out across the days with the same pattern as miniseries.

Table 4. Comparison of VOD Click frequencies of free services

	Miniseries _weekly (N=18)		Miniseries _weekend (N=22)		Soap Opera _morning (N=3)		Soap opera _evening (N=34)		Total (N=96)		
	M	SD	M	SD	M	SD	M	SD	M	SD	F
telecasted day	6638.71	5128.82	10173.68	6114.03	1923.33	810.30	7600.33	6522.90	7923.04	6157.2	2.33
1day after	9240.71	7759.91	<b>15799.77</b>	6016.53	2228.67	861.66	7772.07	6703.54	10340.76	7598.98	<b>8.02**</b>
2day after	8612.88	7088.55	<b>13405.00</b>	4882.12	1463.67	702.12	7341.73	6674.98	9249.61	6792.11	<b>5.91**</b>
3day after	7102.72	4051.87	7591.77	2547.37	1055.67	413.62	7224.13	6676.91	7056.09	5084.42	1.52
4day after	5681.22	3396.00	5003.36	1064.90	1004.00	462.33	7220.91	6985.57	5952.23	5039.21	2.00
5day after	5198.28	2515.04	4134.09	834.59	907.33	430.39	7622.26	7419.67	5797.38	5369.9	3.17
6day after	5086.00	2850.38	4580.09	1091.18	921.33	344.10	7772.88	7355.74	5965.61	5371.01	3.04
7day after	6088.56	3580.61	10521.09	6041.68	2203.67	641.27	8745.15	8205.55	8376.68	6807.1	2.38
Average click	6865.25	3351.51	8669.68	2169.17	1357.71	567.69	7638.79	6306.01	7507.40	4563.35	2.58
Household TV rating	12.16(%)	8.34(%)	14.24(%)	7.83(%)	9.73(%)	1.65(%)	10.91(%)	5.41(%)	12.11(%)	6.89	1.17

\* p<.01 \*\* p<.001

### 3) Complementary goods or substitutes for over-the-air broadcast television?

The next logical question is what is the relationship between TV ratings and internet click frequencies or internet VOD playback viewing? There was a positive correlation between TV ratings of dramas and internet viewing. This correlation was statistically significant for the average of all dramas. Internet VOD click frequency was based on the 8 days starting from the day of original broadcast. On the whole the internet VOD viewing was higher for programs with higher ratings on television.

Table 5. Correlation between TV ratings and internet VOD playback

	Whole Drama Household rating (N=90)	KBS1		KBS2		KBS2	
		Miniseries _weekend Household rating (N=10)	Soap Opera _evening Household rating (N=16)	Miniseries _weekly Household rating (N=17)	Miniseries _weekend Household rating (N=12)	Soap Opera _morning Household rating (N=3)	Soap Opera _evening Household rating (N=14)
CLICK_sameday	<b>0.239*</b>	-0.104	0.258	0.421	-0.089	0.192	-0.235
CLICK_1day	<b>0.435**</b>	0.049	<b>0.751**</b>	<b>0.737**</b>	-0.040	0.122	0.200
CLICK_2day	<b>0.371**</b>	0.172	0.314	<b>0.626**</b>	0.004	0.149	0.079
CLICK_3day	0.240*	0.196	-0.016	0.301	0.074	0.296	0.006
CLICK_4day	0.139	0.109	0.021	0.077	0.017	-0.076	0.153
CLICK_5day	0.107	-0.026	-0.142	-0.008	0.018	-0.126	-0.298
CLICK_6day	0.138	0.040	-0.335	0.185	-0.095	-0.245	-0.474
CLICK_7day	<b>0.305**</b>	-0.002	0.081	<b>0.592**</b>	-0.079	0.136	-0.345
Week's average	<b>0.260**</b>	0.082	0.165	<b>0.630**</b>	-0.083	0.079	-0.151



However, the correlation pattern was different among the four types of dramas. Weekly miniseries followed the pattern of viewing one the day following the original broadcasts and also right before the next broadcast. Dramas that have higher ratings tend to have higher playbacks on the following day compared to drama that have lower ratings.

Because of the structure of the data we do not know whether the same people who watched the episode of the original broadcast watch the program once again the next day or if people who missed the program watch on the internet but we can presume that most of the viewers are using the internet VOD service to view a missed episode of regularly viewed dramas.

## **5. Conclusion**

With the limited data on the viewing patterns of internet VOD services in Korea, we can conclude that the internet VOD service is not a direct substitute nor is it cannibalizing the over-the-air broadcast television. However, this may change once the VOD services become more popular and available directly on TV.

A previous study on the viewing motivation and patterns of internet VOD viewers reveals a similar pattern. An online survey of 900 respondents followed by an in-depth interview of 16 respondents show that TV viewing, internet usage time and the usage of the major broadcasters' websites were highly correlated. The motivation for using the broadcasters' website was more of complementary purposes, that is, to watch missed episodes of favorite shows. Also, the preferred type of programs was similar for both TV and the internet viewing (Kim, 2003). This implies that the internet VOD services are mainly functioning as supplementary media for over-the-air broadcast TV.

The findings of this study can be summarized as follows; First of all, the viewing patterns of dramas on broadcast television were not affected by the change in the internet VOD service payment strategies. The viewing pattern remained consistent even after iMBC started its new pay services. Second, the analysis of the viewing pattern of internet VOD reveals that most VOD playbacks of drama occur within two days of original broadcast on TV and also one day before the next episode is scheduled to broadcast. Third, the correlation between broadcast ratings and internet VOD services was positive, which means that more popular dramas on TV, has a larger demand on internet VOD market.

This explorative study suggests a complementary function of internet VOD services to the original broadcasts of dramas in Korea. However, this study is not without limits. First of all, the playback data for the drama in the dataset is the aggregate of all playbacks for a certain television program and does not reflect the individual episodes' variation. Second, the cable

rerun channels that are extremely popular in Korea, were not accounted for. Most dramas that are broadcast on network TV air reruns on major cable networks within 1-2 days of original broadcast. We can say that the viewers of cable networks and viewers of internet VOD services do not overlap but this also needs further investigation.

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