

# Impact of Television Digitization on Revenue Model of Multi System Operators and Cable Operators in India

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## ABSTRACT

The present paper explained that with cable Television Digitization being underway, MSOs are expanding their business not just in their traditional markets but also making inroads into new regions and different business models are evolving, some of the major MSOs have started providing triple-play service and other value-added services in the digitized markets. The distribution of MSOs over different states is non-uniform. Most MSOs are city based and confined to local areas. Some are regional MSOs while only a few are national MSOs.

**Keywords:** Television Digitization, Cable TV, Revenue Model, MSOs, Cable Operators, LCOs

## I. INTRODUCTION

### 1.1 Multi System Operators

In December 2015, out of 510 MSOs registered for Phase III areas, only 190 MSOs were entering seeding data in MIS system. 135 MSOs had logged but not reported any seeding. 567 MSOs had been granted registration by the ministry. 90 applications under process and 35 applications were pending clarifications. As enter in Phase IV, 695 MSOs have been granted DAS registration and 164 applications under process while 240 applications have been received with incomplete information.

About 700 MSOs have single head-end for phase III and phase IV areas and these MSOs have not devised any mechanism for taking dual feeds for feeding phase III and phase IV areas. MSOs that have single control room for phase III and phase IV areas have been advised to take separate IRDs from broadcasters for taking digital signals in Phase III areas and analog signals in Phase IV areas.

The regional Units (RUs) set up for implementing Digitization in phase III and Phase-IV were fully functional. All RUs are in regular correspondence with MSOs in their regions. State Governments have yet to furnish a list of Phase IV areas in their respective states to MIB. Except Himachal Pradesh and Jammu and Kashmir (which has furnish the list of one division only), lists are awaited from other states. Some areas in the Phase III in Jammu & Kashmir have still not been covered due to non-availability of STBs with MSOs. In Telengana, only 30 to 35% Phase III areas have been covered in the state so far and MSOs may require some time to complete their targets.

In some areas, local cable operators are resisting taking set-top boxes (STBs) from MSOs for installation due to extension granted by various courts. As a result, analog transmission still not running in some phase III areas and the contention is that the Broadcasters should charge them on analog rates according to earlier agreements. MSOs as SitiCable are finding stocking the STBs a problem. SitiCable, for instance,

has 1 million STBs in stock, since they had procured them well in advance. In the state of Uttarakhand, availability of STBs in some areas is a major issue and district-level meetings are being held. Some MSOs that have not even applied for registration, have, however, filed cases for extension in the courts. Cases have also been filed by some MSOs that are not technically ready.

### **1.2 Direct-To-Home Players**

Direct-to-Home (DTH) players in line with cable Television Digitization drive have launched aggressive advertising campaigns in a bid to acquire the maximum number of customers. The cable operators and MSOs have unwittingly helped their cause having delayed DAS-III implementation. With court cases filed in five states and several states facing shortage of STBs, the DTH operators have extra time to have subscribers take DTH services rather than switch to DAS.

### **1.3 Set-Top-Boxes**

DTH services have 18 million active STBs. Apart from this 4 million STBs are catered by Doordarshan's Free Dish and another 8 million by digital cable. Most of the areas have been seeded with STBs except only around 400 (out of more than 6000) areas, many of which are below 10,000 population, while the rest are of below 5000 population. Seeding in the country, excluding Tamilnadu, is more than 75%. Once the final data from all registered MSOs received, this figure shall increase. Dataxis reports that in Q4 2015, India saw shipments over 6 million cable STBs due to Cable Television Digitization. Technicolor shipped close to 2.38 million STBs to India in Q4 2015, followed by Skyworth with 2.19 million shipments. Majority of Technicolor STBs were shipped to DTH operators.

With a mere three HD pay-TV channel in 2010, this number boomed to greater than 60 channels in 2015. As demand for HD Content continues to grow in

India, the average selling price of HD STB has dropped to Rs. 2175 in 2015, compared to Rs.2560 in 2014 (Dataxis, 2012). The demand for HD services is higher amongst DTH subscribers, which in turn has boosted the operators' ARPU. HD STB shipments were 32% of total STB shipments in 2015, up from 14% in 2014. Uptake of HD services amongst cable subscribers is yet to make a mark as cable Television operators are focusing in meeting the Digitization mandate by installing SD STB.

The leading indigenous manufacturers are Trend Technologies, Hero-My Box Technologies, Logic Eastern, Indieon, Riddsys, Simmtronics, One-Eight Technologies, Willet Communications and Modern Communications and Broadcast Systems. The International vendors catering to this market are Changhong, Huawei Technologies, Skyworth, EcoStar, Pace, Technicolor, Cisco Systems, Humax Electronics and homecast.

### **1.4. Indian Conditional Access System**

Funded by the Department of electronics and information Technology (DeitY) for promotion of Electronics Design and manufacturing in the country, ByDesign India Pvt. Ltd. of Bangalore has successfully completed development of Conditional Access System (CAS) for STBs under project. The Development of CAS ByDesign has enabled India to enter a niche market hitherto dominated by five big global companies.

### **1.5 Current Scenario of Cable Television Operators in India**

The Indian cable network has been to the market since ages and covered approx all consumers in India. Since the introduction of DTH network in 2003, the demand of the analog network has come down drastically. In fact, presently in rural areas too DTH service has taken over the cable network. The main reason behind the rise in the d2h connection is the quality of service and picture offered. Government

doesn't have major control over Cable Television Operator's revenue and Subscribers. However, there are certain problems with the use of analog Television connection. Mentioned below are problems faced by user subscribing Cable Television Operators:

- ✓ Cable service consumes too much of bandwidth and LCOs offering maximum channels of 100
- ✓ Cable service doesn't offer extra features compared to D2H service. Though they now offer HD channel but couldn't match the quality of the dish channel
- ✓ Poor quality of audio-video service results into low interest among customers
- ✓ Fluctuating charge of monthly service makes it irritating to the consumer for paying heavy fees but isn't getting desired quality service

Currently, the status of cable Television Operators in India is quite worse as the market share of D2H service is increasing and covering major part of India. In fact, DTH has emerged as the better alternate for Television service. One of the negative parts of having cable Television service is it doesn't offer any interactive service compared to D2H services. At present, cable operators are witnessing a major shortfall in connecting with consumers due to overtake by D2H service. There are certain reasons why a customer should go for D2H service compared to cable operators.

- ✓ The equipment including the dish antenna, set top box and the channels are of high quality giving value to the money paid.
- ✓ The HD quality makes sense to watch some interesting movie with crisp and clear sound and picture.
- ✓ Multiple packages offered according to the channels subscribed to watch. No extra or hidden cost involved in the service.
- ✓ These packages are different from region to region. So accordingly customer can get the packages offered.
- ✓ Watching sports event or high class action

movie in LCD Television with having D2H connection gives a visual treat every time viewer watches.

## II. REVIEW OF LITERATURE

**Liu and Chen. (2001)** examined the relationship between market competition and media performance of cable television industry in Taiwan. Cable television systems differ from these traditional mass media because providing various services such as installation, repairing or billing to their subscribers is an important part of their media performance. Furthermore, cable television systems use lots of resources from local communities and are expected to help the development of local communities. This study uses subscribers' satisfaction regarding program services, customer services and community services to measure the media performance of cable television systems in Taiwan. A telephone survey with 1051 valid questionnaire was conducted to collect data for this study.

**Lin (2001)** explained the explosive potential for revenue growth on the Internet; it suggested that the advertising industry remains perplexed about how to reach consumers in this new medium. Drawing from several bodies of literature including diffusion, motivation, and media substitution theories, this study explored potential predictors for online service adoption. Findings indicate that the cognitive and affective gratification-seeking factors were the strongest predictors of likely online service adoption. By contrast, whereas adopter attributes were moderate predictors, the existing adoption cluster and media use attributes were both weak predictors of likely online service adoption.

**Kim (2001)** analyzed a public broadcasting system with a clear mission that can be used to fulfill the public interest obligations of all broadcasters, thus removing the need for too close supervision of

commercial broadcasters. It is worthwhile to keep in mind that 'public interest' remains as a social goal to pursue in spite of the technological changes to come. As technological advancement, the media environment changed, but it is not a new phenomenon. Technology has always been advancing, and the media environment has been changing for better or worse. The key is the rate of change. It seems that the marketplace philosophy of television provision is gained more power in the policy discourses.

**Zhu (2001)** examined the effects of video-on-demand on cable companies are strategically subdued. In the near term it offers the promise of a truly dynamic pay-per-view business model. In the long term it may challenge the fundamental underpinnings of the entire cable sector. It is this strategic aspect that **Hos:** will now focus on. It will, however, require us to make certain assumptions regarding the future state of technological development. This includes superior compression technology, large, cheap and installed bandwidth, customer- friendly connections to the TV and performance equal to or better than today's standards. With these assumptions in place, we can then attempt to make a logical argument that VOD will not complement the cable industry, but could challenge one of the cable's primary business functions, content management.

### III. RESEARCH METHODOLOGY

#### 3.1 Objective of Study

To examine the impact of Television Digitization on the revenue model of Multi System Operators (MSOs) and Cable Operators in India

#### 3.2 Research Hypotheses

**H<sub>1</sub>:** There is no significant difference among respondent opinion (demographic-wise and stakeholder-wise) regarding the impact of Television Digitization on the revenue model of Television Broadcasters.

#### Sub-Hypothesis

**H<sub>01</sub>:** There is no significant difference between respondent opinion demographic-wise and stakeholder-wise), regarding Digitalization of Indian Television Industry being reduce Broadcasters' overdependence on advertisement revenues by drastically improving subscription revenues.

**H<sub>02</sub>:** There is no significant difference between respondent opinion (demographic-wise and stakeholder-wise), regarding Reduce overdependence of Broadcasters on advertisement revenues being enable them to shun the rat-race of TRPs and being more innovative and creative, ultimately benefitting the Audience through better programming content.

**H<sub>03</sub>:** There is no significant difference among respondent opinion (demographic-wise and stakeholder-wise) regarding Digitalization of Cable Television being an instrumental in reducing carriage fees, launch of Niche channels and investment in quality content for existing channels.

**H<sub>04</sub>:** There is no significant difference between respondent opinion (demographic-wise and stakeholder-wise), regarding Digitization is addressing the challenge Capacity Constraint, Broadcasters are still being made to pay high carriage fees taking the analog era as a base.

**H<sub>05</sub>:** There is no significant difference between respondent opinion (demographic-wise and stakeholder-wise), regarding even as Digital Cable is still struggling to roll out channel packages , DTH Average Revenue Per Users continue growing on the back of services like HD channels and Premium channels etc.

#### 3.3 Research Design

The present research being exploratory cum descriptive in nature, primary data has been collected

from a sample of 350 respondents from diverse socio-economic backgrounds and regions from the National Capital Region using judgmental sampling technique through a structured questionnaire. A 5-interval Likert scale from Strongly Disagree (measuring 1) to Strongly Agree (measuring 5) has been employed to measure the psychographics (attitudes, interests and opinion) of respondents. Secondary data has been collected from diverse offline and online national/international research publications.

### 3.4 The Research Instrument (Questionnaire)

finalized after conducting a pilot study and obtaining

valuable feedback and suggestions comprises of 5 key research statements eliciting critical information from the respondents (apart from relevant demographic information having a bearing on their psychographic attitudes, interests and opinions).

### 3.5 Research Tools

For hypothesis testing and analyzing significant difference Analysis of Variance test using General Linear Model (Univariate Analysis) was applied employing SPSS 20.

## IV. DATA ANALYSIS AND INTERPRETATION OF RESULT

### 4.1 Digitization of Cable Television shall reduce Broadcasters' overdependence on advertisement revenues and improving subscription revenues.

**Table 1.** Univariate Analysis

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	6066.711 <sup>a</sup>	18	337.039	412.464	0.000
Gender	1.749	1	1.749	2.140	0.144
Residence	0.016	1	0.016	0.019	0.890
Occupation	0.871	2	0.435	0.533	0.588
Age	2.047	4	0.512	0.626	0.644
Education	5.268	3	1.756	2.149	0.094
Family Income	3.498	5	0.700	.856	0.511
Type of beneficiary	10.291	1	10.291	12.594	0.000*
Error	271.289	332	0.817		
Total	6338.000	350			

Source: Primary Data

a. R Squared = 0.957 (Adjusted R Squared = 0.956)

\*Significant at 5% level of significance

Table 1 points to the affirmation of the hypothesis ( $H_0$ ) by majority of respondents across categories as there is no significant difference in respondent opinion (gender-wise, residence-wise, occupation-wise, age-wise, education-wise and family income-wise) w.r.t. agreement with the research statement "Digitization of Indian Television Industry shall reduce Broadcasters' overdependence on advertisement revenues by drastically improving subscription revenues", but there is significant difference w.r.t. type of beneficiary (p-value is less than 0.05).

The value of adjusted R Squared is 95.5%, which represents that percentage of variation explained by all variables. Additionally, taking into account the mean value (4.15) and S.D (0.924) along with little statistical difference among respondent opinion it could be concluded that the majority of respondents across categories validate the null hypothesis "There is no significant difference between respondent opinion (Gender, Residence, and occupation, Age, Education and Family Income-wise), regarding Digitalization of Indian Television Industry being reduce Broadcasters'

overdependence on advertisement revenues by drastically improving subscription revenues.”

#### 4.2 Reduced overdependence of Broadcasters’ on advertisement revenues shall enable them to shun the ‘rat-race’ of TRPs.

**Table 2.** Univariate Analysis

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	6397.720 <sup>a</sup>	18	355.429	413.637	0.000
Gender	4.068	1	4.068	4.734	0.030*
Residence	0.715	1	0.715	0.832	0.362
Occupation	10.177	2	5.088	5.922	0.003*
Age	9.459	4	2.365	2.752	0.028*
Education	4.016	3	1.339	1.558	0.199
Family Income	6.089	5	1.218	1.417	0.217
Type of beneficiary	33.773	1	33.773	39.304	0.000*
Error	285.280	332	0.859		
Total	6683.000	350			

**Source:** Primary Data

a. R Squared = 0.957 (Adjusted R Squared = 0.955)

\*Significant at 5% level of significance

Table 2 points to the affirmation of the hypothesis (H<sub>02</sub>) by majority of respondents across categories as there is no significant difference in respondent opinion (residence-wise, education-wise and family income-wise) w.r.t. agreement with the research statement “Reduced overdependence of Broadcasters’ on advertisement revenues shall enable them to shun the ‘rat-race’ of TRPs and be more innovative and creative, ultimately benefitting the Audience through better programming content”, but there is significant difference w.r.t. gender, occupation, age and type of beneficiary (p-value is less than 0.05).

The value of adjusted R Squared is 95.5%, which represents that percentage of variation explained by

all variables. Additionally, taking into account the mean value (3.87) and S.D (1.046) along with little statistical difference among respondent opinion it could be concluded that the majority of respondents across categories validate the null hypothesis “There is no significant difference between respondent opinion (Gender, Residence, and occupation, Age, Education and Family Income-wise), regarding Reduce overdependence of Broadcasters on advertisement revenues being enable them to shun the rat-race of TRPs and being more innovative and creative, ultimately benefitting the Audience through better programming content.”

#### 4.3 Digitization of Cable Television is instrumental in reducing carriage fees, launch of ‘Niche’ channels and investment in quality content for existing channels.

**Table 3.** Univariate Analysis

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	6341.518 <sup>a</sup>	18	352.307	420.012	0.000
Gender	0.064	1	0.064	0.076	0.782
Residence	0.043	1	0.043	0.051	0.821

Occupation	0.902	2	0.451	0.538	0.585
Age	2.852	4	0.713	0.850	0.494
Education	1.869	3	0.623	0.743	0.527
Family Income	8.165	5	1.633	1.947	0.086
Type of beneficiary	24.363	1	24.363	29.045	0.000*
Error	278.482	332	0.839		
Total	6620.000	350			

**Source:** Primary Data

a. R Squared = 0.958 (Adjusted R Squared = 0.956)

\*Significant at 5% level of significance

Table 3 points to the affirmation of the hypothesis (H<sub>03</sub>) by majority of respondents across categories as there is no significant difference in respondent opinion (gender-wise, residence-wise, occupation-wise, education-wise, family income-wise and age-wise) w.r.t. agreement with the research statement “Digitization of Cable Television shall be instrumental in reducing carriage fees, launch of ‘Niche’ channels and investment in quality content for existing channels”, but there is significant difference w.r.t. type of beneficiary (p-value is less than 0.05).

all variables. Additionally, taking into account the mean value (3.88) and S.D (1.071) along with little statistical difference among respondent opinion it could be concluded that the majority of respondents across categories validate the null hypothesis “There is no significant difference among respondent opinion (gender-wise, residence-wise, occupation-wise, age-wise, education-wise, income-wise, stakeholder-wise) regarding Digitalization of Cable Television being an instrumental in reducing carriage fees, launch of Niche channels and investment in quality content for existing channels.”

The value of adjusted R Squared is 95.6%, which represents that percentage of variation explained by

#### 4.4 Even though Digitization is addressing the challenge of capacity constraint, Broadcasters are still being made to pay high Carriage Fees.

**Table 4.** Univariate Analysis

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	6204.055 <sup>a</sup>	18	344.670	370.391	0.000
Gender	2.807	1	2.807	3.016	0.083
Residence	0.552	1	0.552	0.593	0.442
Occupation	2.673	2	1.337	1.436	0.239
Age	0.442	4	0.110	0.119	0.976
Education	3.878	3	1.293	1.389	0.246
Family Income	9.842	5	1.968	2.115	0.063
Type of beneficiary	16.947	1	16.947	18.211	0.000*
Error	308.945	332	0.931		
Total	6513.000	350			

**Source:** Primary Data

a. R Squared = 0.953 (Adjusted R Squared = 0.950)

\*Significant at 5% Level of Significance

Table 4 points to the affirmation of the hypothesis (H<sub>04</sub>) by majority of respondents across categories as there is no significant difference in respondent

opinion (gender-wise, residence-wise, occupation-wise, age-wise, education-wise and family income-wise) w.r.t. agreement with the research statement

“Even though ‘Digitization’ is addressing the challenge of ‘capacity constraint’, Broadcasters are still being made to pay high ‘Carriage Fees’ taking the ‘Analog era’ as a base”, but there is significant difference w.r.t. type of beneficiary (p-value is less than 0.05).

The value of adjusted R Squared is 95%, which represents that percentage of variation explained by all variables. Additionally, taking into account the mean value (3.69) and S.D (1.005) along with little

#### 4.5 Even as Digital Cable is still struggling to roll out Channel packages, DTH ARPUs continues to grow on the back of services.

**Table 5.** Univariate Analysis

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	5556.951 <sup>a</sup>	18	308.720	278.482	0.000
Gender	0.839	1	0.839	0.757	0.385
Residence	0.005	1	0.005	0.005	0.947
Occupation	6.216	2	3.108	2.803	0.062
Age	1.037	4	0.259	0.234	0.919
Education	0.545	3	0.182	0.164	0.921
Family Income	9.451	5	1.890	1.705	0.133
Type of beneficiary	10.899	1	10.899	9.832	0.002*
Error	368.049	332	1.109		
Total	5925.000	350			

Source: Primary Data

a. R Squared = 0.938 (Adjusted R Squared = 0.935)

\*Significant at 5% Level of Significance

Table 5 points to the affirmation of the hypothesis (H<sub>05</sub>) by majority of respondents across categories as there is no significant difference in respondent opinion (gender-wise, residence-wise, occupation-wise, age-wise, education-wise and family income-wise) w.r.t. agreement with the research statement “Even as ‘Digital Cable’ is still struggling to roll out Channel packages, DTH ARPUs (Average Return Per User) continues to grow on the back of services like HD channels and ‘Premium’ channels etc.”, but there is significant difference w.r.t. type of beneficiary (p-value is less than 0.05).

The value of adjusted R Squared is 95.5%, which represents that percentage of variation explained by all variables. Additionally, taking into account the mean value (3.97) and S.D (1.087) along with little

statistical difference among respondent opinion it could be concluded that the majority of respondents across categories validate the null hypothesis “There is no significant difference between respondent opinion (Gender, Residence, and occupation, Age, Education and Family Income-wise), regarding Digitization is addressing the challenge Capacity Constraint, Broadcasters are still being made to pay high carriage fees taking the analog era as a base.”

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## V. FINDINGS AND CONCLUSION

- Majority of respondents across categories (gender, residence, occupation, age, education, family income and type of beneficiary) feel that



Digitization of Indian Television Industry shall reduce Broadcasters' overdependence on advertisement revenues by drastically improving subscription revenues. Digitization is going to be a game changer for the television industry and hence-forth Broadcasters would not be too much dependent on advertising revenue and shall have a very healthy contribution from their subscription revenues. Thus they are expected to be more independent minded and creative in their pursuits in providing quality content to the audience.

- Majority of respondents across categories (gender, residence, occupation, age, education, family income and type of beneficiary) believe that reduced overdependence of Broadcasters' on advertisement revenues shall enable them to shun the rat-race of TRPs and help them because more innovative, enterprising and creative, ultimately benefitting the Audience through better programming content. With the advent of Digitization Broadcasters are expected to be no more over-dependent on advertising revenue and this shall usher better programming content for the audience.
- Majority of respondents across categories (gender, residence, occupation, age, education, family income and type of beneficiary) think that Digitization of Cable Television shall be instrumental in reducing carriage fees, launch of Niche channels and investment in quality content for existing channels. An upturn in subscription revenues is expected to reduce carriage fees and provide opportunities for new, small and niche channels to reach the masses, thus providing more variety and choice for the audience.
- Majority of respondents across categories (gender, residence, occupation, age, education, family income and type of beneficiary) think that even though Digitization is addressing the challenge of capacity constraint Broadcasters are still being made to pay high Carriage Fees taking the Analog-era as a base. Till the last phase of Digitization is

complete there may still be an incidence of high carriage fees because the distributors (MSOs & LCOs) shall try to milk the existing loopholes. This chaos is expected to end soon as the last forth phase of Digitization is expected to complete very soon.

- Majority of respondents across categories (gender, residence, occupation, age, education, family income and type of beneficiary) think that even as Digital Cable is still struggling to roll out channel packages, DTH ARPU (Average Return per User) continue to grow on the back of services like HD channels and Premium channels etc. Contrary to projections, it is the DTH industry that has stolen the limelight from the CAS regime propagated by the Govt. Viewers trust leading DTH brands and setting a DTH device installed is very handy and there is also a lot of brand value associated with DTH as the most popular DTH brands are endorsed by big celebrities like Shahrukh Khan and Amir Khan.

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