

Accessing Consumer Propensity towards Adoption of OTT (Over the Top) Application Platform among Indian Users in Recent Times

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Abstract: Over the Top (OTT) application is the new buzz in the communication technology. It is observed in the recent times that there has been a paradigm shift in the communication and media preference particularly in the online forte where more and more people are switching towards the Over the Top application usage in place of the legacy communication channel and applications. There is a clear cut departure from the traditional approach of the user towards more convenient and versatile platform being provided by modern age OTT application. These applications are attracting more and more users day by day and the style of using this type of application is rather creating a novation in the matter. This study will examine the impact of OTT application platform on user's acceptability and intention to adoption. In this study, Structural Equation Modeling and Exploratory Factor Analysis (EFA) by SPSS-23 and AMOS-23 were used to analyze the data and to establish a research model for accessing consumer propensity towards adoption of OTT.

Keywords: OTT (Over the Top), Communication Technology, Consumer Propensity, Indian Users.

I. INTRODUCTION

The media industry over the communication channels were dominated for a long time by the telecom operators which were charging good amount of charges with a commitment of high-grade network maintenance. There has been a great change due to the emerging over the top (OTT) services in this sector. These services use the underlying operator network as a mere conduit while all e OTT service is assumed to service facets including intelligence and topic resides in the application running on a client device to be a risk for the ISP and DTH operators as they use the network without any hindrance and without much consideration of the operator boundaries. The OTT service providers deliver audio, video and other media over the internet backbone and shunt out the traditional operator's network. AS these providers does not have the requirement of business or technology affiliation. As a result of this there has been a shift in the consumer preference towards the "freemium" based business models and the adoption rate is increasing.

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It is already observed that the global annual SMS revenues have fallen down from US\$120 billion in 2013 to US\$96.7 billion by 2018, due to increasing adoption and use of Over-The-Top (OTT) messaging applications. Appropriate study on the impact of OTT VoIP (Voice over Internet Protocol) applications on voice revenue revealed that overall global telecom voice revenues (including fixed subscriptions) will decline from \$970.4 billion in 2012 to \$799.6 billion by 2020, at a CAGR of 2.4%. Also, as a result of VoIP by 2020 the telecom industry world-wide will see a loss of revenues approximately worth \$479billion which accounts for 6.9% of the total revenue from Voice. Over the back drop of the current situation and ever increasing popularity of OTT among the users the operators have started perceived competition from Internet service and OTT video services as a significant threat. The OTT players without making any heavy investment making the use of the available IP networks and the operators are getting concerned over the fact that OTT video providers will take away the value proposition offered by their VoIP services and they would be relegated from broadband network-operators to a dumb pipe.

II. LITERATURE REVIEW

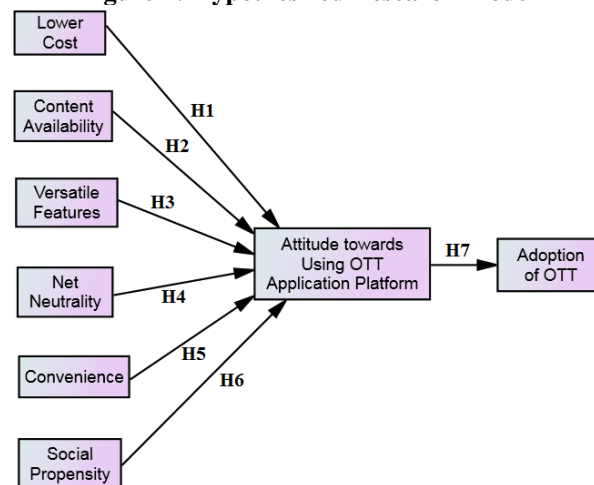
Usage of OTT services (such as Skype, Line etc.) for local or national has increased exponentially recently which is driven by technology advances driving higher data bandwidth and service quality that too at a very low price and having no complexity associated with the place of origin and destination of the call, subscription pattern, variation of Off-net/ On-net nature which are the influencing factors of the cost increase. OTT services for international calls from India. On-net charges reflect the greatest cost benefit as telecom companies do not offer any special on-net discounts for international calls, OTT services offer calls to other users of the same service absolutely free of cost. OTT platform also offer extended services zero cost for on-net calls such as video calling (Skype, Fring, Line), media sharing (Skype, Nimbuzz, Line) among others (Telecom lead, 2014). Voluminous content availability over internet & development of Content Delivery Networks (CDN) led to increased adoption of video OTT applications. Increased use of smartphones and advancement in technology has increased some phone habits in users like streaming videos or posting them on social networking sites.

CDN hosting system allows OTT applications to transmit the content to the end users as quickly and as efficiently as possible. It helps in enhancement of the consumer experience. OTT players are even providing the scope for creation of their own original content apart for the ordinary streaming. The ability to stream this content on multiple internet connected devices (ICD) has become an added facility provided by the OTTs. CDN hosting system allowed OTT players to transmit the content to the end users as quickly and efficiently, it helps enhancing the consumer experience. Content owners have also played a very important role in driving the adoption of OTT services by reducing the time it takes a film to go from theatrical release to availability for purchase on Electronic-Sell-Through (EST). Due to rigidity about SMS and MMS pricing by the legacy operators without any innovation of the services has rather made it unpopular with respect to the OTT application. Legacy SMS has stayed limited to a 160 character limited text messaging services while MMS to a one to one multimedia messaging service that is much more expensive compared to even the SMS. Compared to this, OTT messaging services offer consumers a feature rich experience combining capabilities to exchange multimedia content like pictures, videos and audio in addition to text, group chats, voice messages, location sharing, etc. There are no limits attached to the size of text messages and the multimedia content is sufficient for most purposes (Informa’s World Cellular Revenue Forecasts, 2018). Net neutrality, is a philosophy associated with internet which, is the idea that Internet Service Providers (ISPs) should provide their subscribers equal access to all information on the internet with no prejudice against the source of the information. This principle, though not explicitly enforced by regulations in most countries, has been adhered to across the major part of the free world. What it means for telecom companies is that as ISPs, they are forced to provide their subscribers with unhindered and unprejudiced access to OTT (The Future of Voice, 2012). Due to several commitment of net neutrality wings are clipped for the telecom companies can do business and earn revenues while at the same time adding expenses in the form of compulsory conformances such as roll-out obligations, services to rural, low density areas and so on. Compared to this, OTT players face minimal regulatory constraints. The limits put on their business usually exist only to the extent of addressing the security and privacy concerns associated with user data. And even these regulations are not well defined in most nations till date. As far as service obligations go, they are practically non-existent for OTT players beyond what they promise their users. Hence OTT players have essentially been able to build creative, flexible business models which they continue to adapt to the market’s requirements. The versatile features of the utilities provided by the OTT platform are another prominent point of popularity of this platform among the users. These features include easy calling, extended messaging services, sharing of files of different format and the social media handling etc. Most of the OTT platform provide varieties of utilities in a single frontend and gives the opportunity to the user to use the application as per their requirement and that too with utmost ease.

III. HYPOTHESES AND RESEARCH MODEL

- H1:** ‘Lower Cost’ positively influences ‘Attitude towards Using OTT Application Platform’.
- H2:** ‘Content Availability’ positively influences ‘Attitude towards Using OTT Application Platform’.
- H3:** ‘Versatile Feature’ positively influences ‘Attitude towards Using OTT Application Platform’.
- H4:** ‘Net Neutrality’ positively influences ‘Attitude towards Using OTT Application Platform’.
- H5:** ‘Convenience’ positively influences ‘Attitude towards Using OTT Application Platform’.
- H6:** ‘Social Propensity’ positively influences ‘Attitude towards Using OTT Application Platform’.
- H7:** ‘Attitude towards Using OTT Application Platform’ positively influences ‘Adoption of OTT’.

Figure 1: Hypothesized Research Model



IV. RESEARCH METHODOLOGY

Secondary and Primary data were used in this study for analysis to achieve the objective of this research and to establish the hypothesized research model (Figure 1). Survey questionnaire was prepared using 5 Point Likert Scale for the purpose of collecting primary data. We collected the feedback regarding adoption of OTT from 250 OTT users through Convenience Sampling technique. Primary data collection period was September, 2021 to November, 2021. Structural Equation Modeling and Exploratory Factor Analysis (EFA) by SPSS-27 and AMOS-27 were used in this study as statistical tools.

V. DATA ANALYSIS AND FINDINGS

Reliability and Validity Testing:

For checking the reliability of collected primary data, we evaluated Cronbach’s Alpha value which should be more than 0.70 for maintaining acceptable range. Here, alpha value (0.903) showed the acceptable range of reliability (Table 1). On the other hand, for validity testing of primary data we performed Exploratory Factor Analysis (EFA). Also KMO value (0.794) and Bartlett’s Test of Sphericity (<0.001) indicated good sampling adequacy and aptness of executing EFA (Table 2). EFA extracted 8 separate factors with ‘factor loadings’ larger than 0.5 using Varimax Rotation Method (Table 3).

Table1: Reliability Statistics

| | |
|------------------|------------|
| Cronbach's Alpha | N of Items |
| .903 | 16 |

Table 2: KMO Measure and Bartlett's Test

| | | |
|--|--------------------|------------------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | 0.794 | |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 993.617 |
| | P-Value | <0.001 |

Table 3: Exploratory Factor Analysis

| Factors | Questions | Factor Loading (>0.50) | % of Variance Explained |
|----------------------|-----------|------------------------|-------------------------|
| Lower Cost | q1 | .961 | 12.301 |
| | q2 | .942 | |
| Social Propensity | q11 | .929 | 11.714 |
| | q12 | .920 | |
| Content Availability | q3 | .941 | 10.425 |
| | q4 | .932 | |
| Adoption of OTT | q15 | .928 | 10.317 |
| | q16 | .915 | |
| Convenience | q9 | .923 | 10.305 |
| | q10 | .889 | |
| Versatile Features | q5 | .927 | 10.219 |
| | q6 | .852 | |
| Net Neutrality | q7 | .891 | 10.112 |
| | q8 | .863 | |
| Attitude | q13 | .822 | 9.868 |

| | | | |
|--|-----|------|--|
| | q14 | .819 | |
|--|-----|------|--|

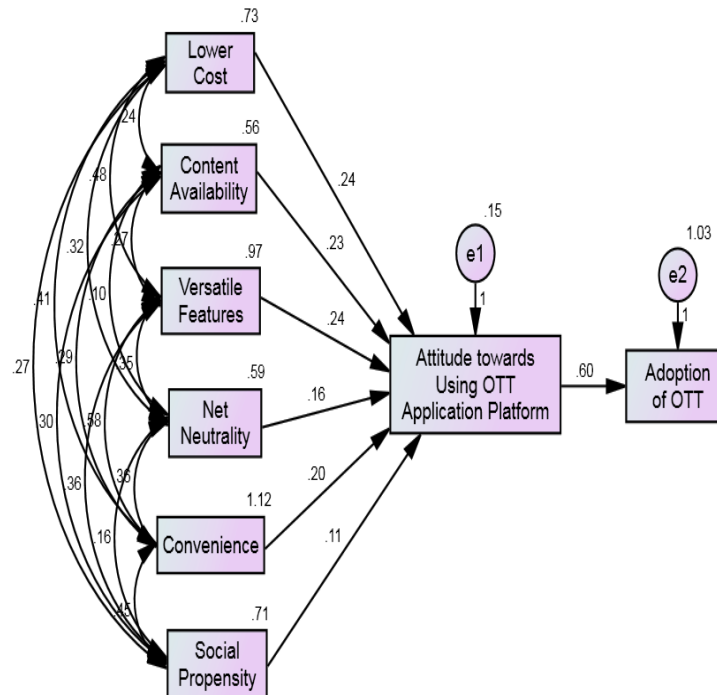
Extraction Method: Principal Component Analysis,
 Rotation Method: Varimax with Kaiser Normalization.
 Rotation converged in 6 iterations.

The following table showed different fitness indices (Table 4) to judge the structural appropriateness of the research model.

Table 4: Fit indices for Research Model

| Fit Index | Fitness Values (Tolerable Range) |
|---|----------------------------------|
| Chi-square / degree of freedom | 1.854 (< 3) |
| Root mean-square error of approximation (RMSEA) | 0.039 (< 0.06) |
| Goodness of fit index (GFI) | 0.972 (> 0.90) |
| Adjusted goodness of fit index (AGFI) | 0.919 (> 0.90) |
| Normed fit index (NFI) | 0.977 (> 0.90) |
| Comparative fit index (CFI) | 0.981 (> 0.90) |

Figure 2: Output of Structural Equation modeling (SEM)



Path analysis (Table 5) through Structural Equation modeling (Figure 2) has been executed for finding out the impact of different independent factors related to facilities of OTT applications on ‘Attitude towards Using OTT’ and ‘Adoption of OTT’ in India.

Table 5: Path analysis of Structural Model for Hypothesis Testing

| Measurement Path | | Hypothesis Testing | Regression Estimate | S.E. | P-Value |
|------------------|------------------------|--------------------|---------------------|------|---------|
| Attitude | ← Lower Cost | H1 (S) | .247 | .038 | <.01* |
| Attitude | ← Social Propensity | H6 (S) | .109 | .043 | <.01* |
| Attitude | ← Convenience | H5 (S) | .210 | .051 | <.01* |
| Attitude | ← Content Availability | H2 (S) | .234 | .034 | <.01* |
| Attitude | ← Versatile Features | H3 (S) | .239 | .041 | <.01* |
| Attitude | ← Net Neutrality | H4 (S) | .158 | .055 | <.01* |
| Adoption of OTT | ← Attitude | H7 (S) | .612 | .078 | <.01* |

Note: * indicates 1% level of significance
(S) indicates Hypothesis Supported

In this study, all hypotheses were accepted. With the advent of boundless means available for communication and remote social interaction, most of the modern user feels the need to share every emotion, thought and experience instantly with everyone. They not only intend to share information, they have increasingly been sharing exponentially rising quantities of pictures, videos and audios. Explosion of user created multimedia content also has led to increased sharing & communication among social groups. Since OTT services have drastically reduced the cost for the consumer for sharing information and content, cost is no longer a deterrent in this regard. With convenient and instant access to value added communication technologies, the consumer would only want to share more. This can be seen by the emergence of OTT applications like Instagram, Snapchat, Vine, WeChat etc. which allow users to share multimedia content with their buddies.

Under telecom laws in India, calls originating in the country can't be terminated on mobiles or landlines anywhere in the world without a license. However, an OTT player can still launch "a full-fledged VoIP service" by tying up with someone who has a license. Nimbuzz has tied up with Spectranet for providing VOIP services which allows Indian users to make international calls. For an OTT player, the cost of providing VOIP service will cost a fraction as compared to the cost spent by a telecom operator. However these regulations apply only to Indian companies. Viber has recently launched Viber out service in which it lets its user call landlines and mobiles without having any license.

VI. IMPLICATION

On one hand the OTT application is invading the users' mind and preference day by day and the traditional communication mechanism is gradually becoming outdated. The telecom companies are losing their revenue for the cause and standing helpless as the same conduit is used by OTT application allowing bouquet of service utilities to the user even to some extent evading many of the rules and regulation of the site which is absolutely not possible at the end of the telecom operation even at a higher price. More and more explorations of utilities are making the users jubilant about strong bias in the preference of choice of OTT application over the traditional communication and data sharing domain.

VII. CONCLUSION

As the user preference is increasing steadily for OTT and on the other hand the revenue of the legacy telecom operators are facing a steep decline due to the silent ambush of the OTT platform in the communication domain it is the high time to look in to the matter in depth and to design a framework to regulate this new platform in the way that every stakeholder can get the benefits out of this and as well as make a mechanism to attain sustainable development in the process with special reference to the information and communication domain and the media world.

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