New Media Adaptation in Sri Lanka: Streaming Video Utilization in Colombo District

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Abstract
New media has been superimposed by the traditional media including radio, television and newspapers. Along with the penetration of the internet and the popularity of use of the social media, new media has been spread widely by replacing the existing electronic and traditional media. Streaming video is one of the most influential types of media that has been popular among all generations. This has been act as a disruption for the existing traditional media. When it comes to Sri Lanka, which is still using analogue television transmission, the impact of streaming media gets highly impacted. This research has focused on studying of the utilization of streaming media by people who lived in Colombo by using the response of TV BOX which has connected to the internet. The objective of this research is to examine the reason why people used to view recorded live content at the same time as live content on air. This research has been carried out using secondary data analysis of people meter and a primary survey by connecting 100 TV BOX users. Primary survey results has been showed that 86% of subscribers are using live recorded or video-on-demand content. Further from secondary data analysis, it has been depicted that among 298,795 users, 30% of them use recorded live or video-on-demand service at the time along with linear TV. The conclusion of this research is that people are using live recorded or video-on-demand content along with linear TV to fulfil their expectations, gratification, and niche overlap.

Keywords:
New Media, Video on Demand, Streaming Video, Linear TV, gratification
Introduction

According to the Oxford dictionary, new media stands for mass communication using digital technologies such as Internet. Hence, internet has become the major driver to spread the use of new media. New media has five distinct characteristics which are digitality, convergency, interactivity, hypertextuality and vertuality (Lister et al., 2009). Digitalization means converting analog media to digital using mathematical model (Koddebusch et al., 2023). Digitalization helps to preserve the quality of media in reproduction with very minimal quality degradation, retrieved large amounts of data in very minimal bandwidth, manipulated and stored in a limited space. Convergence is one of the key attributes of new media (Fadilla & Sukmono, 2021). Information, media, electronic and computing are the functions of the convergence which derived new media concepts. Traditional media is capable to do one-way communication but new media has interactivity features in which the audience can participate to give feedback using a return path. Hence new features have enabled the freedom of controlling information by the audience which endows great power in human communication. According to Lievrouw (2023), new media has enabled global network feature in which information can move around the globe in a freely manner. Non-linearity, interactivity and openness are the attributes that helped to enable the features of hypertextuality (Johnston & Susan, 2017). This enables not only information flow in network but also connects the audience spontaneously. Virtual and augmented reality are the main two concepts introduced by new media. Cyberspace provided by new media enabled the audience to live in a virtual reality world. This has predominantly impacted the youth generation and now its spreading worldwide among other generations including teenagers and mid-old ages (Maloney et al., 2021). This not only impacted to separate the reality and virtuality, but also effectuate the free alteration of gender, appearance and all personally identifiable features. Hence these distinct features of new media have been impacted by the industry and society along with its powerful attributes and global enablers.

Despite the rapid change in the global digital adaptation, countries with emerging economies including Sri Lanka have recently started the digital revolution (Jayawardena et al., 2023). Among the different industries in the country, media is one of the industries which has rapidly digitalized over the period (Bendaş, 2023). Further new media require to have connectivity and one of the main features of that is interactivity (Gong, 2023). Thus, the use of new media in Sri Lanka has become popular in the country and the internet population has doubled over the last decade and 42% of the population is active in online and social media (Hootsuite, 2020). Hence Sri Lanka has been exposed to the use of digital media especially with connected devices.

This research is focusing to study the facts that the consumption of streaming video usage in people who are having television broadcast reception as well. The study will analyse the intention to use streaming video with video on demand (VOD) and recorded live TV among the population who has the ability to access linear TV feeds which is a traditional live TV feed. Colombo district has been selected for the population, based on the fact that having the largest number of connected devices available area within Sri Lanka (Census and Statistics, 2020). The main aim of this research is to find out what is the reason that people tend to use video on demand and live recorded content simultaneously that the linear TV feed available to view the content.

Literature Review

New media brought a fresh dimension in conveying messages to the public. Birth of new media through the existence of digital and internet in the communication field, boosts up the method of delivering information (Alivi et al., 2018). It provides a different way to gather information rather than just depending on traditional media. Further, the landscape of media has transformed from being dominated by traditional media to something with a wider perception due to usage of new media. This change has affected the way people think (Rangel & Carretero, 2023).

Streaming video is one of the subset of new media (Aha & Makinde, 2023). Since the media industry also have been related to business, digital transformation for businesses is now viewed as a crucial element towards business sustainability (Dass & Md Johar, 2022). The earliest reference which recognize as streaming media was a patent awarded to George O Squier in 1922 for the efficient transmission of
Streaming video had started to become the norm in late 90's, where the video could view before entirely download and streaming is characterized by playing the video data as it’s received (Chalaby, 2023).

Television viewing is not a context free and its influenced by the technology which is using the access the program, interest and principles of the users, the social spaces where they occur and the form of content that its available (Carey and Elton, 2018). Hence technology adoption to the television has directed to consume new form of programming with the change of users behavior. Changes in programming and behavior create opportunities to technology to take advantage of the new environment. With the newly introduction technologies consumers have embrace code-cutting for compatibility with their digital lifestyle and enable ability to change their viewing pattern (Crawford, 2015).

According to Lin (1994), when a new medium offers more functionally desirable than old medium, the audience may abandon the old medium and replaced it with new. Hence introduction of new technology has been impacted to viewers expectation and use of new media (Lievrouw, 2023). Sri Lanka has started the television broadcasting in 1979 (Rathnasiri, 2016) by covering central Colombo area. Along with the introduction of the television people have absorbed it to their living standard very rapidly and 5,251,126 households in Sri Lanka, and found that 4.1 million households having at least one TV in their house (Gunawardena & Ranawana, 2019). Hence Television has become the mass media which has rapidly spread in the country. As per the Mastercards (2020) Sri Lanka has 92% TV viewership in households. Among the TV viewership households, 96% use television as main media of news and current affairs (Gunawardena & Ranawana, 2020).

According to Kemp (2023), Sri Lanka have 7.2 million social media users which is 32.9% from total population and the number of social media users have been increased by 1.5 million which is 23% increment within one year. During last decades it has been observed that social media usage has become widespread to use as information sharing medium (Lenadora et al., 2020). Hence it has been depicting that Sri Lankan audience social media usage is rapidly increasing over the period. Even though Sri Lanka have analog television and radio broadcasting predominantly as main electronic media, digital pay TV operation covers 30% of the households (Gunawardena & Ranawana, 2020). Hence some of these households has a TV connected unit which connected to internet with return path. These devices giving user data which can help for user behavior analysis. This will indicate the people behavior of linear TV feed, recoded live TV content which is called as cathup services and video on demand services (Dialog, 2023).

There are 653,381 households in Colombo district (Census, 2020) and 298,785 houses are consisting of TV box (Dialog, 2023) which has connected to internet. Hence these devices have ability to use of live video and streaming video including VOD and recoded TV services. Users have access to streaming video with video on demand services such as films, teledramas, documentary, education, sports and music contents and recoded TV which consist of catchup and time shift feature which is recording of linear TV services (Telecompaper, 2020). Thus, users can select the required service upon their choice without and technical barrier.

There are about 298,785 users have been connected in TV box in Colombo district (VIU & SLT TVGO, 2023) Sri Lanka and they have access to linear TV, VOD, catchup and timeshift TV features using single device connected to the TV. These users can independently access to any of service at a given instance. These information are pushed back from the return path via IP and get stored in a backend for people meter system.
Figure 1 indicates the unique subscribers count who have access to linear TV or recorded VOD content using the TV box for the period of 29th March 2021 to 29th March 2023. It has been observed that there is uneven customer behavior throughout the period. There are about 58,600 customers available in 29th March and by the 29th of March 2023 it has been increased to 298,785 (Internal, 2023).

Sri Lanka has digital literacy about 65% in urban areas and 47.4% in rural and 23.1 in estate areas (Statistics, 2020). This implies the tendency of usage of the digital device by people and majority from urban area due to their highest level of digital literacy level. According to Tsai (2023), perception and intention has been key parameters for people to use the video streaming. Hence by considering the ease of use and convenience have been the main intention to use the streaming video (Venkatesh et al., 2012).

With development of technologies nowadays, people adopting them make judgment about how useful such technology for them (Micova, 2023). According to the Jeffres (1978), media substitution theory indicates that if two media is serve the same requirement, consumers will select the best suits their needs. Hence if any attribute of streaming video motivates to use it by consumers, they will tend to adopt it.

User and gratification theory has been developed to understand the reason people to looking and search for specific media to satisfy their specific needs. According to Katz et al. (1974), users are not acting as passive audience. Further they have different needs to have gratification such as cognitive, affective, personal integrative, social integrative and tension free needs. Acquiring intellectual and academic knowledge based on cognitive aspect is one of the main requirement of media users. Obtaining emotional feelings referred to affective needs. Users tend to use media to reassure their status, gain, credibility and stability which referred as personal integrative. Audience tend to use media to have social integrity with family, friends and relations in society. Moreover, media is using by consumers to escape from real world and relieve from tension and stress. Further media is using for education tool by connecting with streaming video delivery (Tan et al., 2022). According to Voon et al. (2020) perceived benefit is one of the key factors which consider to use of digital service. Hence this study will use the fact of user intention to use the media for their gratification.

According to the theory of niche, it has been indicated the degree of niche overlap between different media and superior nature of one media over others for gratification opportunities (Dimmick &
Rothenbuhler, 1984; Dutta-Bergman, 2004). This will help to measure the complementarity between use of traditional media with liner TV and use of recoded live with VOD services.

Research has been carried out based on the mentioned theories to identify the reason for gap between people use to watch the recoded live content while its available as linear TV.

Methodology

This research is mainly focus on study the reason of people tends to utilize the streaming video despite of having access to liner TV. The users who are having access to streaming video as well as liner TV have been identified by the common set of devices which are using by majority called “TV BOX” (Dialog, 2023). This research conducted based on conceptual framework built based on three theories including media substitution theory, use and gratification theory and niche theory.

Figure 2: Conceptual framework for use of streaming video

As depict from Figure 2, expectation, gratification and niche overlap act as independent variables and use of streaming video is the dependent variable. There are three hypotheses has been derived in this research;

H₁: There is a relationship between user expectation and the use of streaming media.
H₂: There is a relationship between user gratification and the use of streaming media.
H₃: There is a relationship between user niche overlap and the use of streaming media.

User expectation and use of streaming media has a relationship and it has been derived from the media substitution theory (Krugman, 1985; Laswell, 1948; Lin, 1994). The relationship between user gratification and use of streaming media has been identified based on gratification framework (Katz et al., 1974; Ruggiero, 2000). Niche overlap and use of streaming media hypothesis has derived based on the theory of the niche (Dimmick & Rothenbuhler, 1984). This research will carryout to identify the reasons that tendency of users who are watching the streaming recoded content regardless of having access to liner content in same device at same time. Quantitative research produces insights utilising enormous scale overview (Al Zisan et al., 2021). There are two type of data sources have been considered to this research that is secondary and primary data. Secondary data has been gathered using TV BOX return path application backend analytical information. These data consist of actual subscriber behavioral information as system get updated based on the user video consumption pattern.

Since each user having access to liner TV, Recorded Live TV and VOD, all the user behavioral statistics has been measured for twenty four months’ time duration from 29th March 2021 to 29th March 2023. According to He et al., (2023), simple random sampling is the best suitable sampling method which can use for generalizing the results. The research has used the population of 298,785 users (Dialog ViU, 2023) and sample size of 100 users in simple random selection method. Hence results are with the 95% confident level and 13.83 confident interval (Krejcie & Morgan, 1970).
Table 1: Research questions and relationship with hypothesis.

<table>
<thead>
<tr>
<th>NO</th>
<th>Questions</th>
<th>Related Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What are the features you are using in TVBOX</td>
<td>H₁</td>
</tr>
<tr>
<td>2</td>
<td>Are you using Catchup/VOD for live events</td>
<td>H₂</td>
</tr>
<tr>
<td>3</td>
<td>What is your opinion about future TV technology</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>If you are using VOD/Catchup or TimeshiftTV respond to followings</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>What are the occasion that you use live TV most</td>
<td>H₃</td>
</tr>
</tbody>
</table>

As depicted in Table 1, research questionnaire has derived in relationship with three hypotheses in order to obtain the relationship with reach construct. Primary data has been gathered from guided questionnaire based survey which is using the medium of telephone interview. The data which collected has been tabulated for ease of analysis and comparison purpose.

Results and Discussion

This research was conducted based on the fact that the intended behavior of the users who are living in Colombo district with below features in his TV connected box.

1. Users who have access to linear TV channels.
2. Users who have connected his TV device to internet.
3. Users who is having linear TV, VOD and recoded TV (Timeshift and catchup) access in the same device.

Since these devices are capable of accessing the live TV and recorded streaming contents, it has been observed the more than 45% of the users are accessing the recoded TV and VOD content each day except some peak durations. According to the analyses of the peak duration, it has been identified the linear TV peaks are due to special events such as Sinhala and Tamil new year period (Daily News, 2023), Sri Lanka Vs Bangladesh cricket series, Sri Lanka vs England cricket series and Sri Lanka Vs India cricket series (Cricinfo, 2023). During these peak events, VOD contents usage also have been increased throughout the period. Hence it has been identified that even though customers are using the live TV, they tend to watch recorded live or VOD in peak times.

The questionnaire which have been carried out with selected sample, results depicted the use of the linear TV, VOD and recoded live features as per Table 1.

Table 2: TV BOX usage behavior survey; extract and results of the questionnaire

<table>
<thead>
<tr>
<th>No</th>
<th>Questionnaire</th>
<th>Percentage (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Are you using Catchup/VOD for live events</td>
<td>86</td>
</tr>
<tr>
<td>2</td>
<td>What is your opinion about future TV technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recoded TV/VOD will use for most of times</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Live TV will use for most of times</td>
<td>28</td>
</tr>
<tr>
<td>3</td>
<td>What do you believe that users require VOD/Catchup TV feature</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use for convenience as can view at any time</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Use to avoid advertisement</td>
<td>74</td>
</tr>
</tbody>
</table>

According to the results of the research questionnaire, it has been identified that more than 78% of users are using recoded live features and 72% believe that future television will be streaming video. Hence consumers expectation is to use streaming television in future television scenarios. Further it has been observed that consumers are using recoded live and streaming features for their gratification. Moreover, the consumers tend to use the streaming video as a complementary of linear TV to use niche feature of the media use such as recoded TV and VOD. According to the research people are tending to use linear TV for the occasion of teledramas, films, entertainment as 26% and education as 36% which reflect the lower use in the respective genres. This deprive the requirement of use live video in respective areas and people
interest to have it in streaming video as recoded TV or video as niche feature of the streaming media against the traditional broadcast.

Figure 3: Live TV, VOD vs Recorded live feature usage of the audience

People behavior when using the linear TV has been depicted in figure 4.

Figure 4: Linear TV usage

According to Figure 4, audience most of the times use linear TV for live events and news. Also, users are believed that there is a minimal requirement of use the live TV for other entertainment and educational contents including teledramas and films. Hence most of the linear TV users are using the VOD and recoded live feature during their device use regardless of the type of the content.

According to the Figure 1, it has been observed that 45% of the consumers are using VOD or recorded catchup content in each instance. This statistic indicates that even though customers having access to linear TV, they are accessing the recoded live TV and video on demand contents in frequent manner.

Figure 4 shows the customers behavior and intendedness to use the recoded TV and VOD content, which is most of teledramas, films, entertainment and education contents. This is because they pretend to use it offline as it will help to use them access in convenient time and 74% required to avoid unnecessary
trailers and advertisements (Research statistics, 2021). Hence most of the users are believed in future live TV will persist only for watching live events and news. Convenience is the main factor to use VOD content for films and dramas (Chaudhari et al., 2023). Hence people who are having access to both live and recorded content are not reluctant to use VOD content regardless of the habitual bias of watching the linear TV. Since the Sri Lanka has introduced these OTT service in 2019 (Dialog, 2023) it has been only four years to have considerable amount of spread of consumers who are having access to this platform. Further consumers are using all the functionality of the unit without any hesitation (Figure 3). Hence it is depicted that users are hedonic to use the linear TV and VOD streaming features who are in Colombo districts.

According to the results which has received for the three hypothesis it has been observed that expectation, gratification and niche overlap item ratings has been increased along with increase of usage which depict that all independent variables have positive relationship with use of streaming video.

**Conclusion**

The conceptual framework in figure 2 is valid for this research, allowing us to conclude that the assumptions and proposal are valid. Thus, expectation, gratification, and niche overlap affect streaming media usage proportionally.

Video streaming services has been impacted to people who live in Sri Lanka specially in Colombo district as 15.3% of the users have adopted the service within two years of period from 2019 introduction to 2021. Further it has been showed that more than 80% of the users are using recorded TV. Hence people have a tendency of use of streaming video and this will be the main source of video consumption in near future.

The spikes which indicated in the special event and public holiday occasions are shown in figure 1 also depicting higher usage of recorded TV and VOD utilization as well. Thus, peak demand of video utilization will also imply of having a higher demand of VOD and recorded TV utilization. Even though there are 298,785 subscribers have registered and active to use of video services, there are about 214,000 users are connecting to the service platform simultaneously. This implies that peak concurrency of video platform is 71.6% from the active user base at any given instance.

From the Sri Lanka population of 15.3% who live in Colombo district have been considered for the research, the results can be generalized for total population in Colombo district (Krejcie & Morgan, 1970). New finding of the study is, even though traditional liner TV is available widely over the population, users are tending to adopt the new media video streaming services very rapidly due to the fulfilment of their expectations, gratification and niche overlap. The contribution of this study to the industry is, if services providers need to increase the liner channel lineup, they need to expand the facilities to have more concurrency access of recorded TV content proportionally to new additions to offer a better user experience. Further user gratification to streaming video has been increasing over the period hence it requires dimensioning the systems to facilitate the user demand. It has been also discovered that niche overlap of the new media features carried out by the streaming video has been predominantly impacted to increase the adoption of new media.
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