Monetizing OTT Video Platform on Web and Mobile – An Overview

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ABSTRACT
We have seen over the last few years there is a drastic changes in the way user consume communication services. More and more consumers are turning to Over The Top (OTT) services, such as video on demand and messaging. Challenges begun when it comes to Monetize over the top (OTT) platform for millions of users, since there are many challenges like low bandwidth, downtime, load balancing, disconnection, Content availability etc. In this paper the focus has been put to discuss the sources of complexity and critical factors for developing live application successfully monetizing the OTT platform on Web and Mobile.

Keywords
Over The Top, monetizing services, OTT Application, OTT on Mobile, OTT VoIP Introduction.

1. INTRODUCTION
It is known that India is the fastest growing economy and here digital channels are growing constantly. In the upcoming year's pace of change will be much faster, since India is a country with have large base of young educated population with increasing income levels. Big challenge at ground level is online infrastructure, good application architecture and good broadband bandwidth which is the need of the hour. Currently users are struggling with both these requirement, average speed of the broadband is less that 2 mbps and internet penetration is below 16%.

Research on OTT services on web and mobile can be related to different technical (standards), commercial, social, political and regulatory factors [1] and [3]. A focus will be on the market Scenario, Sources of complexity and critical factors that help to develop successful Monetization OTT platform on Web and Mobile.

This paper is structured a, firstly an update of existing market scenario is given. In the literature review an attention has been paid to literatures on previous research, substitution and replacement. Then focus has been put to discuss the sources of complexity, then architecture and factors for monetization OTT platform. Finally the paper is concluded with future scope.

2. LITERATURE REVIEW
Many organizations have studied the related to Over The Top (OTT) services. Spirit DSP, in its report "The Future of Voice" [4], has also studied what will be impact of OTT VoIP (Voice over Internet Protocol) applications on voice revenue. According to the report the revenue will decline from $970.4 billion in 2012 to $799.6 billion by 2020, at a CAGR of 2.4%. For overall global voice revenues (including fixed subscriptions. Also as a result there will be a loss for telecom industry of approximately $479billion which accounts for 6.9% of the total revenue from voice by 2020. Further Impact of OTT Services on Telco Revenues has already been described in [12].

There is another study by The Diffusion Group (TDG), the weekly average time spend on watching OTT TV will have a steep rise by 425% by 2022. This shows rapid switching to OTT via platforms such as Apple TV, Smart TVs, Mobile TVs, Mobile apps etc.

In another study KPMG in India analysis that there will be drastic increase in the online subscriptions for Monetization content and also revenue from advertisement will increase by 2018.

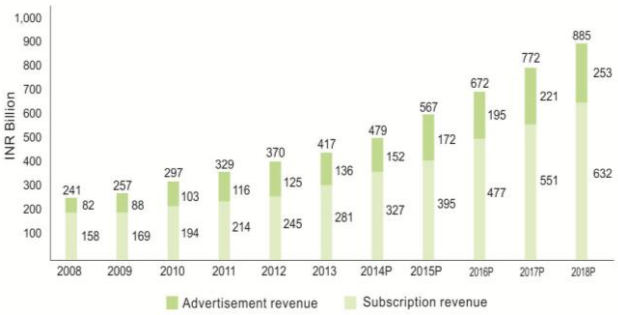

Fig1: Shows the increasing graph of advertisement and subscription revenue from 2008 to 2018.

Further in research it is find that OTT systems are struggling to utilize layer 3 management for implementing bandwidth reservation, packet prioritization and overload protection. Due to lacking of quality content delivery system to end user problem has led to the use of adaptive streaming protocols (e.g. Apple HTTP Adaptive Bitrate Streaming [8], Live Adaptive Streaming by Wide Vine [9] and Adobe HTTP Dynamic Streaming [10]) that dynamically monitor end user bandwidth speed and deliver video content on the basis of Internet performance. According to Internet speed it optimizes video quality by switching between lower or higher quality streams [11].

According to Unishere latest research shows the most technical concern for OTT providers have to face for providing quality service and experience. As today's viewer expectation is very high and they are very much concern for the quality of service they are getting which set new standards for online broadcasters. Adoption research shows that it are the young, high educated, financial well to do youngsters that

are the early adopters[5]. Orgad [1] also see the young, but also the restless as a potential group of adopters.

OTT on Mobile studies mainly focus on the delivery of streaming video content to mobile devices without a clear interactive or social component [6]. Personalization of mobile TV content is rarely studied [7].

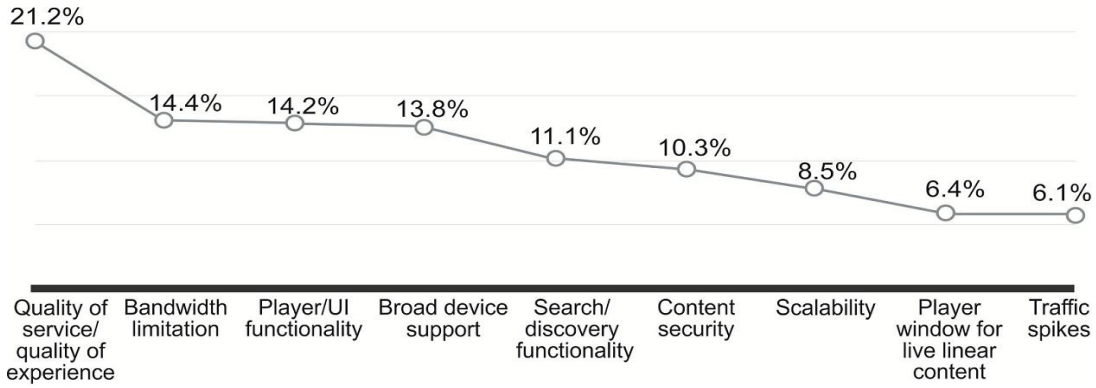

Fig 2: Most significant technical challenges for business in offering OTT services today.

3. SOURCES OF COMPLEXITY FOR OTT PLATFORM

There are several complexities in multiscreen OTT video service implementation have been find while implementation. These include:

3.1 Application Development

Today application development needs to develop largely different code bases for apps on different client platforms. HTML5 is now using very often for rich media application that need DRM. Open source is becoming more prominent choice for developing this kind of application which also has to interact with many 3rd party applications for delivering content to end users on all kind of Web browsers and Mobile devices. One has to take care of solution for media player used which streaming, now a days adaptive player has been used according to browser compatibility. By default it is HTML5 Player but if browser is not compatible then it automatically detects and run flash.

3.2 Encoding and Streaming

In today scenario there is the need to support several different codecs and streaming protocols, and to create and store a large number of files per content title, to reach a wide variety of devices.

Another challenge is adaptive streaming according to end users bandwidth. Although streaming video technology has existed since the late 1990s, the adaptive bitrate technology required for uninterrupted viewing at the best possible quality dates back to the late 2000s; and, as given below, various incompatibilities exist between adaptive streaming protocols and popular client platforms.

3.3 Digital Rights Management (DRM)

There is the lack of standards for DRM that both which satisfies the content protection requirements of Hollywood studios (and other content licensors) and is supported on a sufficient variety of clients. Tools and technologies exist to help minimize some – but not all – of these areas of complexity. These tools and technologies are in various stages of adoption. Yet another area of complexity is studio requirements for content protection. Streaming music services typically rely on standard SSL/TLS transport encryption to protect content.

3.4 Application Development

In today's scenario Pay TV operators in particular are realizing new competition as they expand from managed networks to over-the-top services on the Internet; in fact, the Internet has forced many operators to face their first real competition of any kind. And the competition comes from multiple sources: it includes services that focus on single access models that are simple for consumers to understand by themselves, such as subscription VOD (Netflix, Hulu Plus), rental and sell-through (Apple iTunes, Amazon Instant Video), and standalone services from name-brand content providers (HBO GO, CBS All Access) – not to mention unlicensed streaming and downloads. In contrast, many operators offer 6 limited VOD and SVOD services of their own, in addition to the same branded content that providers like HBO and CBS now offer by themselves.

According to A.T Kearney Survey in 2014 shows the inportant factors which enable growth of OTT videos.

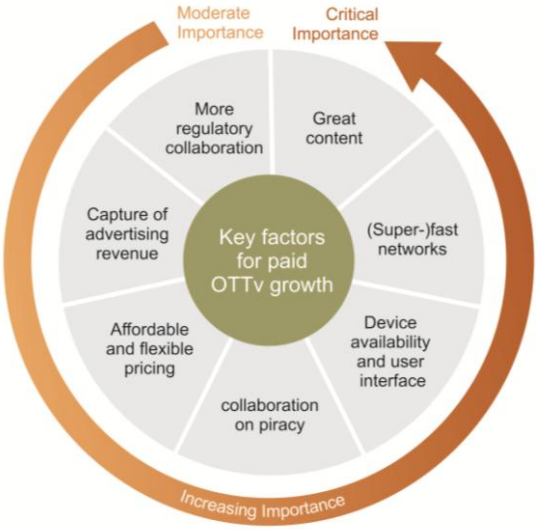

Fig 3: Shows factors to enable growth of OTT videos.

4. MONETIZING IN AN OTT VIDEO WORLD: FOUR CRITICAL SUCCESS FACTORS

Now a days more and more broad casters and service provider shifting to OTT platform for end users. As it is known that revenue from ads and subscription is increasing year by year so there is very high potential of earning in OTT services. So providers are developing OTT monetization strategies to enhance the user base in this competitive environment. The service providers have to provide their best services at competitive pricing to end users then only they can be a winner. It is observed during implementation that broadcasters and services provider must aware of four critical success issues while implementing OTT platform.

4.1 Embrace OTT

In today's scenario it is clear that OTT video services are here to stay, it is mandatory that service provider should focus on good content and delivery model for end users. They need to grab the OTT opportunity — and need to move quickly.

4.1.1 Multiscreen TV

Providers should focus on multiple-screen TV Everywhere initiatives a top priority.

4.1.2 Content is the king

Content is the king on Internet. So providers should be very cautious what they are providing according to their target audience. That's because also content providers come to the market in a position of power (they have the content everyone wants and the option to share that content directly with consumers), they do not want to disrupt their existing, important relationships with service providers.

4.1.3 Increasing Viewership

Since provider are always looking for increasing viewership which directly proportionate to advertising revenue for live content. So Broadcaster is always under pressure to bring good audiences and more revenue generation will be there for their live shows and programs. OTT video enables broadcasters to connect their live TV programming though EPG and targeted advertising to multiple devices.

4.2 Conquer All Screens and Platforms

Now a day if you are looking for OTT platform then automatically challenge comes to make it compatible to all screens, browsers and Operating Systems, and then only broadcaster can think to have a reach and increase number of viewer's. Today's audience wants effortless reach to platform and content.

4.2.1 TV Everywhere

TV Everywhere (the ability to watch cable content on multiple devices within the home) Platform architecture should be flexible to all.

4.2.2 Compatible to all Platforms

Broadcasters should conquer an array of operating systems and devices: smartphones and tablets, desktops and laptops, connected/smart TVs, gaming consoles and OTT set-top boxes then only they can fulfill the promise of TV everywhere. They must also ensure content protection, deliver a common user experience across all devices and replicate the quality and reliability of "living room" TV.

4.3 Address Technology Challenges

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4.3.1 Content Protection to all screens

4.3.1.1

It has to be clear that can provider deliver real-time content access and authorization with the ability to dynamically enforce rights and entitlements based on device, quality of content, content licensing rules, location and network based entitlement?

4.3.1.2

Can *provider* provide digital rights management (DRM) protection with root of trust at all times?

4.3.1.3

Can *provider* give Quality under any network condition?

4.3.1.4

Are *providers* delivering the highest-quality end-user experience on all devices and platforms under any network conditions?

4.3.1.5

Do *provider* have quality assurance mechanisms so effectiveness can be measured, including statistics for video views, ad views, time-shifted content playback and events (such as fast-forward, rewind, skip, network conditions and bitrate connectivity change)?

4.3.1.6

Are *providers* meeting consumer expectations for quality and user experience (e.g. does the OTT viewing experience match that of the traditional set-top box TV in the living room)?

4.3.2 Dynamic Workflow

4.3.2.1

Can provider automatically ingest live and VOD content with associated metadata, social connections, entitlements and rights information?

4.3.2.2

Have *provider* accounted for a unified workflow for transcoding, segmentation and content protection across all devices to reduce the infrastructure operating expenses and capital expenses?

4.3.2.3

Can *provider* enable one-time content preparation for multiple platforms and networks?

4.3.2.4

Can *provider* personalize the user experience with no changes to the video stream?

4.3.2.5

Monetization of premium content?

4.3.2.6

Can *provider* provide dynamic and targeted multi-screen ad insertions and replacements?

4.3.2.7

Can *provider* leverage video markers to fully customize ad insertion on a per-client or per-device basis for linear live and VOD?

4.3.2.8

Can *provider* enable one-time content preparation for multiple platforms and networks?

4.3.2.9

Can *provider* personalize the user experience with no changes to the video stream?

4.3.2.10

Monetization of premium content?

4.3.2.11

Are *provider* equipped to capture and collect real-time multi-screen content and advertising consumption based metrics based on user, device and location?

4.3.2.12

Can *provider* support various monetization options beyond advertising, such as subscription, authentication, rental and pay-per-view?

The answers to these questions must be "yes." Half measures that compromise security, quality or functionality are bound to alienate consumers; those that are expensive, hard to implement or have an unclear monetization model will not pass muster with company stakeholders.

4.3.3 Figure out of the Mix

Once service providers and content owners have embraced OTT, expanded to all devices and worked out the technology challenges, they must figure out which monetization model — or combination of models — to pursue. Multiple options are emerging, including:

Subscription - Can The subscription model is good for consumers because they get fixed costs and unlimited access to content and good for service providers because they get a predictable revenue stream. This is the model Netflix uses, to great success. The subscription model works especially well for monetizing a large library of older movies and TV shows, where consumers are paying for a wide selection, rather than its freshness. The challenge with the subscription model is in the start-up. To make this model successful, companies must make a big investment to get to a critical mass of content and subscribers — and they often flame out before they hit the mark.

5. Architecture Framework of OTT Platform

5.1 Entities Interactions

It shows the inter relation to all elements that will interact to each other to provide reliable and effective solution to end user

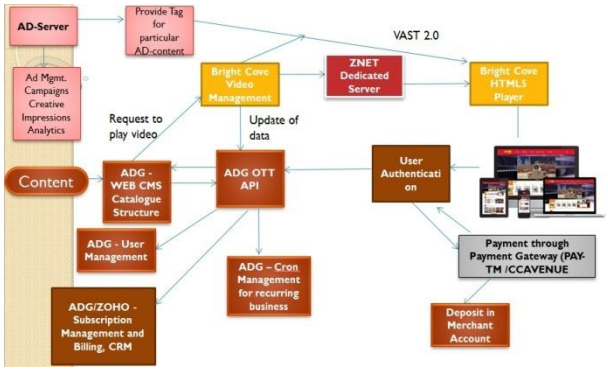

Fig 4: Entity flow of the implemented OTT platform

In figure 4, the brown color blocks work is developed by authors of this paper and Entities in pink, yellow and red are third party blocks which will integrate to the systems through API and will help in delivering robust system.

5.2 Layer Structure

There are 3 broad layers which interact to each other. Top layer is CMS Layer, middle layer is API's layer which consists of different API and lower layer is Media Layer.

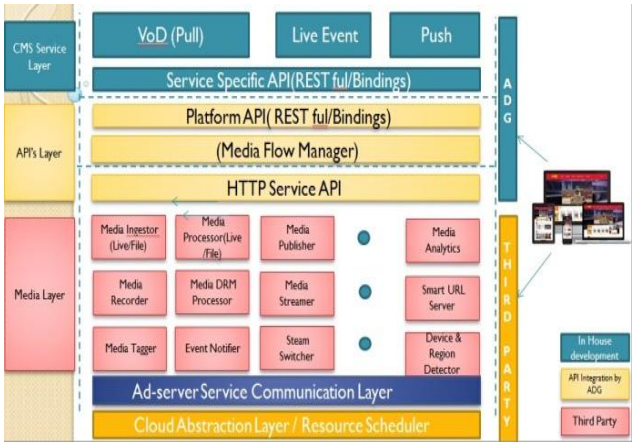

Fig 5: Shows the layer Architecture of OTT platform

6. CONCLUSION

There are many upcoming challenges while implementing OTT service platform for mobile and web and monetize the content. Lots of study and work has been done in this direction and it has also been tried to get some factors which help in making application a successful application for subscription based method. In this paper the efforts have been made to highlight the complexities sources and factors framework for implementing full monetizing platform. In the end the successful implementation of live OTT application for web has been done.

In next phase the work will be continued to implement the same application on mobile. The efforts will be put to overcome all major bottlenecks for OTT on Mobile. Also in future the work will be continued to highlight some insights related to trend of content selection and its view by different users of different age groups.

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