



# A Review on Video Co-Streaming Application

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**Abstract**— Recently, the entire world experienced a period of lockdown that the people of India had never seen before, for such an extended period of time. In such a situation, in this day and age of technology and the Internet, everyone spends their free time in front of a digital screen, where they have a lot of options to see and choose from. People prefer online entertainment to offline entertainment in this age of digitization and long-distance communication. This document investigates cloud-based video streaming methods, with a focus on mobile devices. It is a tool that allows users to enjoy the company of their friends in an "online cinema" setting by synchronizing a video file over the internet. It will benefit those who enjoy watching television series or movies with family and friends.

**Keywords**- cloud,OTT,video streaming

## I. INTRODUCTION

The introduction of Social Media Platforms such as Twitter and Facebook has changed the traditional concept of "community," and virtual communities have grown as a result. With people from all over the world being able to connect through shared virtual experiences, the desire to expand on these experiences should no longer be dismissed. With the introduction of digital film and television viewing platforms such as Netflix and Amazon Prime, new avenues for entertainment have opened up – with the community at the forefront. Individuals in long-distance relationships or online communities can now bridge gaps in traditional popular entertainment pastimes like watching movies.

However, there is currently limited availability to share this experience in real-time on a single platform – rather, the platforms must be manually synchronized at each end. This creates a gap in the entertainment and community market in a digital age that actively encourages community and sharing in real-time.[5]

Video streaming refers to moving images that are constantly received and displayed to an end-user while being delivered by a provider. The verb form, "to stream," refers to the process of delivering media in this manner; the term refers to the medium's delivery method rather than the medium itself. [2]

Essentially, video streaming compresses and buffers the video before sending it to the end in small chunks of packet data. End users will benefit from receiving a series of video packets that can be directly played before the entire video is received.

This platform utilizes existing technology and entertainment traditions with newly evolving and emerging community structures and demands in a global online world.

Virtual Theatre is a tool that enables users to watch TV or movies with their friends and family. It syncs a video file over the internet, letting users enjoy it in an online cinema setting.

Existing research shows that virtual communities are one of the fastest-growing digital phenomena; however, the core aspect of the virtual community is knowledge sharing rather than experience sharing. As a result, our proposal to develop a Social Networking Platform that allows multiple users to view and experience entertainment together via a single platform –

enhances the concept of virtual community through the sharing of real-time experiences and knowledge.

Despite the existence of various websites and applications that serve the same purpose, they have different characteristics and are not exactly the same.

## II. LITERATURE REVIEW

In every society, media is an essential component of the superstructure. It is very important in the dissemination of information. Technology has undoubtedly been the driving force behind people's live diversity in the last five years, particularly in the rapidly changing world media. The nationwide lockdown resulted in an unexpected increase in online viewing percentages.

According to the Google Trends report, leading platforms like Netflix and Hot star were the most-searched platforms since March 1 2020. Similarly, the Daily average users for Amazon Prime had a hike of a whopping 83 per cent, which meant there was an ever-growing appetite for Content Consumption since the lockdown. [2]

The latest hike was a subject of research that did the media habits and watch time drastically altered. Lockdown as more time was being spent with the family. Due to the epidemic "Corona Virus" which spread all over the world, everyone facing the Pandemic "Lockdown" making people spend their whole time inside their house with family and gadgets. And naturally, the more we stay at home, the more we find ourselves glued to the screens. Now, with no film releases insight because of the shutdown of theatres and shooting of TV shows are stalled across the country, what everyone is finding solace in are the OTT platforms.

## III. METHODOLOGY

After the text edit has been completed, the paper is ready for the template. Duplicate the template file by using the Save As command, and use the naming convention prescribed by your conference for the name of your paper. In this newly created file, highlight all of the contents and import your prepared text file. You are now ready to style your paper; use the scroll down window on the left of the MS Word Formatting toolbar.

### 3.1 Prototype Design

To design a prototype of an app for Virtual Theatre we used Figma. We chose this software as it allows for design and demonstrations to be created.

The design's core concepts were simplicity, accessibility, and a user-friendly interface. We feel that our prototype does project these ideas in its current state, whilst also giving an outline of how the app would work and look.

### 3.2 UML: Use Case Diagram

Single Modeling Language (UML) is an elegant modeling language that allows for abstract visualizations. It is a standard frequently used in software architecture. Use Case layouts describe the practical behaviour of the program system from the point of view of the users or agents included.[1]

The following use case diagram for Virtual Theatre includes presents the setup and main processes.

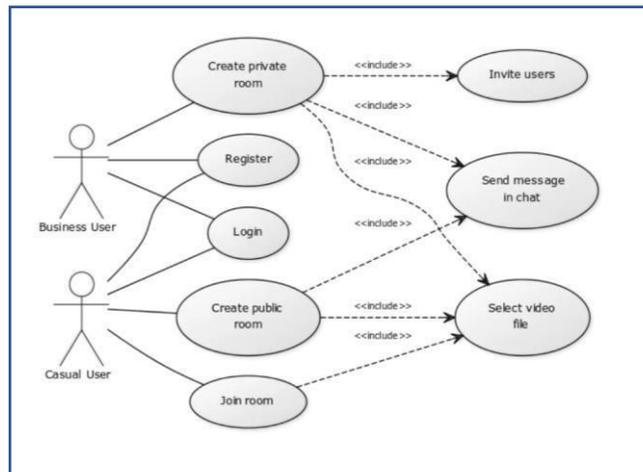


Fig 3.2.1 UML Case Diagram

### 3.3 User experience and usability goals

User experience design is an essential component of any product, especially those aimed at a broad demographic. Examining the product and how it would be used in the real world from the perspective of a user can provide valuable information that can help influence how the product looks and behaves. It is critical to consider not only what a product can do, but also why it should be capable of doing so and how it does so.

#### 3.3.1 Usability goals

It can help guide the design process by emphasizing and prioritizing the most important aspects of the product's user experience. It aids in keeping the design focused and on track to achieve our goals. The following are the usability objectives that we hope to achieve with Virtual Theatre:

- *Effective to use* - It allows users to start a video on multiple computers at the same time.
- *Easy to use* - It should be simple to learn how to use.
- *Easy to reuse* - It should be simple to pick up and use again.
- *Efficient to use* - It should not take a long time to set up and use.
- *Safe to use* - It should allow the user to use it with a low risk of making mistakes and running into errors; in case of wrong input (e.g. selecting the wrong file), it should allow the user to undo their actions and re-do a step taken incorrectly.
- *Good utility* - It should have a variety of tools to enable various functionalities and options to allow for various use cases: Friends and families watching movies/TV shows for fun, business users watching training or informational videos.[1]

## IV. IMPLEMENTATION

### 4.1 Module 1: Login/Sign-up Page:

This page will ask for users credentials if they sign up for the first time or are logging in to their account again. Accepting email-id, phone number, user-id and password.

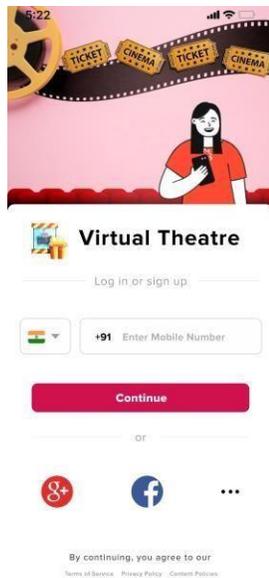


Fig 4.1.1 UML Case Diagram

### 4.2 Module 2- Home Page:

This page will include various features such as content genre, filter and minor details.

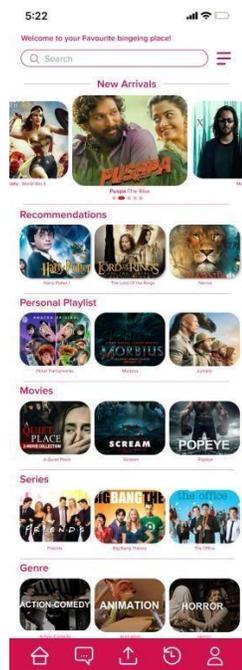


Fig 4.2.1 UML Case Diagram

### 4.3 Module 3-Chat Page:

This page will include help the user create a chat room and stay in touch with the people in the chat room via texts during the video is being played simultaneously.

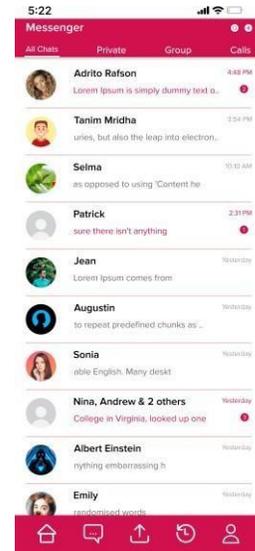


Fig 4.3.1 UML Case Diagram

### 4.4 Module 4-Upload Page:

This page will help the user to upload their own content and share it with other users.

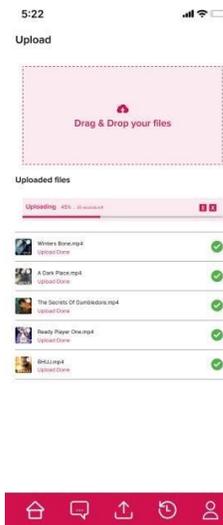


Fig 4.4.1 UML Case Diagram

### 4.5 Module 5-Library Page:

This page will include the watch history, upload history, room history, etc.

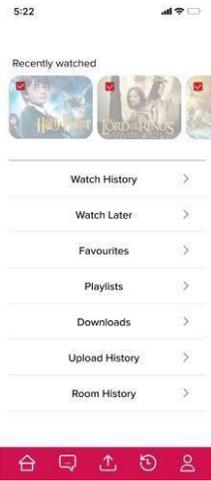


Fig 4.5.1 UML Case Diagram

#### 4.6 Module 6-Profile Page:

This page will include the user details, settings and Account Accessibility options.

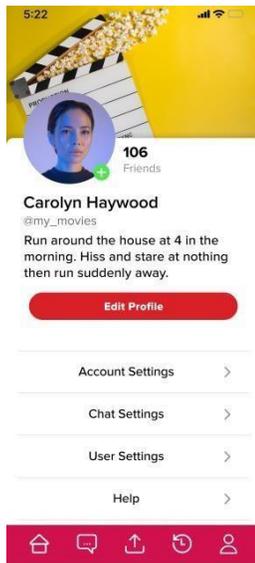


Fig 4.6.1 UML Case Diagram

### V. VALUE PROPOSITION

The Project offers its users an easy-to-use, high-quality space for watching movies, TV shows, or any other type of video. We want to improve communication among moviegoers and recreate the social experience of sitting down in the same room to watch TV, even if our users aren't sitting next to each other. This is accomplished by synchronizing the video player of choice on each user's computer so that when someone presses the play or

pause button, it is replicated on everyone else's screen. Nowadays, it is difficult to find a service like ours, with the option for a high level of support and flexibility.

### VI. DISCUSSION

The use of a user behaviour model to the design of an online streaming system is another field of our research. Despite the existence of numerous advanced architectures and frameworks, customers still face issues when it comes to video streaming. This article discusses topics such as bandwidth bottlenecks, among others. In the future, more advanced architectures could be proposed to address these issues.

Although video stream providers presently support some of the interactions like, security, scalability, and copyright difficulties, there is still no generic video streaming engine that can be dynamically modified by video providers to enable new streaming services.

Because of the increasing number of content-generating sources, the diversity of display devices, and the high-quality consumers want, video streaming repositories are growing in size. This significant growth in repository size poses a number of issues for multimedia storage systems. The three main issues of video streaming storage are capacity, throughput, and fault tolerance. The diversity of viewers' devices is one of the key reasons for the storage capacity difficulty in video streaming. Multiple (more than 90) versions of the same movie should be made and stored to cover increasingly varied display devices.[1]

Previous research has provided strategies for overcoming video streaming storage difficulties. Techniques for storing partial frames of a movie in the proxy cache have been proposed. Their proposed method lowers network bandwidth costs and improves the durability of streaming video in low-bandwidth environments. When a video is stored on a disc, the disk's throughput limits the number of concurrent accesses to that video. This limits the number of people who can watch a video at the same time. Several research efforts have been conducted to address the throughput issue. Multiple disc storage is configured to boost throughput when storing video streams on a single disc that has a low throughput. To boost storage throughput, propose data stripping, in which a video is divided and saved across many storage devices. Before being saved, video streams are divided into blocks. The blocks can be stacked one on top of the other (continuously) or spread across multiple storage devices. Although the approach of contiguous storage is straightforward to implement, it suffers from fragmentation. The scattered method, on the other hand, solves the fragmentation problem at the expense of a more difficult implementation. Video streaming storage systems are more reliable and fault-tolerant when video streams are spread across numerous discs and data striping and data interleaving algorithms are used.

### VII. RESULT AND CONCLUSION

In this paper, we've reviewed several intelligent videotape streaming schemes and grouped them into four main schemes as follows. Videotape adaption scheme is the first order which is an intelligent algorithm applied to videotape streaming to keep the quality of videotape being transmitted according to the colorful and instable bandwidth condition. Limitation of the

scheme is egregious when it applied at large variety of customer in network with large different bit- rates. Scalable streaming scheme is the alternate type of intelligent videotape streaming scheme that's able in maintaining the quality of videotape streaming in network terrain where numerous druggies admit videotape according to their characteristics. Still, it doesn't guarantee detention jitter in heterogonous network. Videotape summarization scheme is more intelligent result compare to former schemes. This scheme can identify large volume of videotape streaming data in heterogonous network terrain. The main issue of this scheme is high computational cost it has. Final scheme is called secure streaming scheme. It offers unique approach to former schemes with security in mind. The main problem which causes the scheme hardly espoused is that it doesn't give flexible regulations of videotape streaming data similar as adaption or scalability. In the future, results from this study can be bettered in several ways similar as QoS assessment of several schemes in simulation terrain and applying particular intelligent algorithms to videotape streaming -learning operation systems.

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