How to improve Paid Subscriber Growth by 10% for Hotstar?

Context

Company context:

Hotstar is a leading digital streaming platform that offers a wide range of content including movies, TV shows, live sports, news, and original programming. Launched in 2015, Hotstar quickly emerged as one of the largest streaming services in India and has expanded its presence globally.

As a subsidiary of Star India (a wholly-owned subsidiary of The Walt Disney Company), Hotstar benefits from its strong content partnerships and access to a vast library of popular shows and movies. Hotstar offers content in multiple languages, catering to diverse audiences across India and other countries.

Hotstar's platform provides users with a seamless and personalized streaming experience across various devices, including mobile phones, tablets, smart TVs, and web browsers. With a user-friendly interface, advanced search functionalities, and personalized recommendations, Hotstar aims to enhance user engagement and satisfaction.

Product context:

Hotstar is a feature-rich digital streaming platform that offers a diverse range of content, catering to a wide variety of audience preferences. The platform allows users to access a vast collection of movies, TV shows, live sports events, news, and original programming.

Hotstar's product is designed to provide a seamless and personalised streaming experience across multiple devices. It offers a user-friendly interface that enables easy navigation and content discovery. The platform supports streaming on mobile phones, tablets, smart TVs, and web browsers, ensuring that users can enjoy their favourite content anytime, anywhere.

One of the standout features of Hotstar is its focus on live sports streaming. The platform holds exclusive digital rights to major sporting events, including cricket tournaments like the Indian Premier League (IPL), international cricket matches, football leagues, and more. Users can access high-quality live sports coverage and enjoy a thrilling viewing experience.

Hotstar provides both free and subscription-based services. The free version allows users to access a limited selection of content supported by advertisements. For enhanced features, ad-free viewing, and exclusive content, users can opt for Hotstar VIP or Hotstar Premium subscriptions. These subscriptions offer additional benefits such as early access to new releases, special premieres, and access to premium international content.

Overall, Hotstar's product is centred around delivering a comprehensive and immersive entertainment platform. It combines a vast content library, personalised recommendations, live sports coverage, original programming, and a user-friendly interface to provide users with a compelling and enjoyable streaming experience.
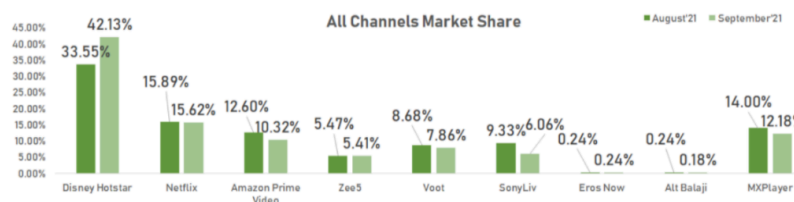
Competitive Analysis

The OTT market in India witnessed a massive surge in viewership post the pandemic era. As per the report published by RBSA Advisor, India's OTT market is expected to touch a record-breaking milestone of $12.5 billion from $1.5 billion as of 2021.

To achieve this milestone the next growth wave will come from tier II, III, and IV cities and the Indian language speaking population.

OTT platforms such as Disney+ Hotstar, Netflix, Amazon Prime video, SonyLiv, ZEE5, MXPlayer, Voot, Eros Now have gained immense popularity during the COVID 19 Era.

Overall Market Share:

To understand how each of the OTT players is performing in terms of traffic visibility we identified overall traffic acquired by each of the OTT and calculated %contribution towards summation of total traffic
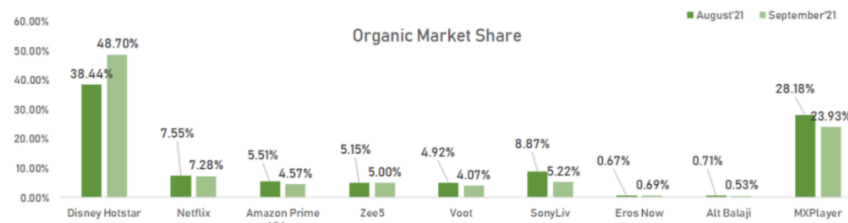

Data source: Similar Web

Disney+ Hotstar is leading the OTT space with the highest overall visibility of 42.13%, followed by Netflix (15.62%) and MX Player (12.18%) at a distant 2nd and 3rd place respectively
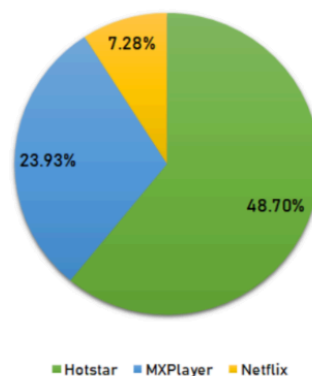
Organic Market Share

Similar to the overall market share, the organic performance of OTT players have shown that Disney+ Hostar is leading the market with 48.70% of organic share. The second highest is MXPlayer with 23.93% share and Netflix with 7.28% share.

Data source: Similar Web

Data source: Similar Web

Goal

Improve paid subscriber growth by 10% by focusing on the no of paid users

Problem Space

1. **Segmentation**

   User Segments:
   1. **Urban Segment Users:**

a. Demographics: Urban Hotstar users typically reside in cities or metropolitan areas. They are diverse in terms of age, profession, and socioeconomic backgrounds. They may include working professionals, students, families, and individuals from various cultural backgrounds.

b. Tech-Savvy: Urban Hotstar users are generally tech-savvy and comfortable using digital platforms and streaming services. They are familiar with mobile apps and online content consumption.

c. Content Preferences: Urban users of Hotstar have varied content preferences, enjoying a mix of genres such as Bollywood movies, popular TV shows, live sports events (such as cricket, football, and tennis), and regional language content. They appreciate a wide range of options and seek high-quality and engaging content.

2. **Rural Segment Users:**

a. Geographical Location: Rural Hotstar users reside in villages or rural areas with limited access to entertainment options. They may have limited access to movie theatres, cable TV, or other traditional media sources.

b. Digital Penetration: While digital penetration in rural areas is growing, rural Hotstar users may have lower levels of familiarity with digital platforms and streaming services compared to their urban counterparts. However, there is a rising trend of digital adoption in rural areas.

c. Content Preferences: Rural users of Hotstar enjoy a variety of content genres, including Bollywood movies, popular TV shows, live sports events, and regional language content. They appreciate entertainment that is relatable to their cultural backgrounds and preferences.

d. Limited Internet Connectivity: Rural areas may have limited or intermittent internet connectivity, which can affect the streaming experience. Users may rely on mobile data connections or shared community internet access, which can be less stable compared to urban broadband connections.

e. Affordability and Accessibility: Rural Hotstar users often value affordability and accessibility. They may opt for mobile data plans or internet cafes to access the platform. They may also choose plans that offer lower data consumption options or utilise offline viewing when internet connectivity is limited.

  f. Local Language Content: Hotstar's availability of regional language content is particularly appealing to rural users who prefer consuming entertainment in their native language. They seek content that caters to their linguistic preferences and reflects the diversity of regional cultures

 3. Tier 2 or 3 cities

  a. Geographical Location: Tier 2 and Tier 3 cities and towns are typically smaller urban centres outside major metropolitan areas. Hotstar users in these areas may have limited access to entertainment options compared to larger cities.

  b. Increasing Digital Penetration: Digital penetration in Tier 2 and Tier 3 cities and towns is growing rapidly. Hotstar users in these areas are increasingly familiar with digital platforms and streaming services, with a rising trend of digital adoption.

  c. Content Preferences: Tier 2 and Tier 3 Hotstar users enjoy a variety of content genres, including Bollywood movies, popular TV shows, live sports events, and regional language content. They appreciate entertainment that caters to their diverse cultural backgrounds and preferences.

  d. Regional Language Content: Hotstar's availability of regional language content is particularly appealing to Tier 2 and Tier 3 users. They prefer consuming entertainment in their native languages and seek content that reflects the diversity of regional cultures and languages.

2. <u>User Persona</u>

- **Persona 1 –** The Regional Language Viewer, Rajesh

Characteristics:
1. Language Preference: Rajesh predominantly watches content in his regional language, embracing and celebrating the cultural nuances and storytelling styles associated with it.
2. Multilingual Proficiency: Rajesh may be bilingual or multilingual, having proficiency in both his regional language and the national or international language commonly spoken in his region.
3. Cultural Identity: Rajesh strongly identifies with his regional culture and takes pride in consuming content that reflects his cultural heritage.

4. Technologically Savvy: Rajesh is familiar with using digital platforms and mobile applications, seeking convenience and flexibility in accessing and streaming regional content on different devices.

Behavior:
1. Preference for Regional Content: Rajesh predominantly consumes regional language content across various genres, including movies, dramas, reality shows, and sports events.
2. Active Content Discovery: Rajesh actively explores the platform's recommendations and categories to discover new regional content that aligns with his interests and preferences.
3. Engagement with Regional Community: Rajesh engages in discussions and forums with other regional language viewers to exchange recommendations, reviews, and opinions about regional content and hot topics.
4. Loyalty towards Regional Stars: Rajesh exhibits loyalty towards popular regional actors, directors, and artists, actively seeking out their latest works and supporting their projects.

Needs:
1. Accessible Regional Content: Rajesh seeks a streaming platform that offers a wide range of regional language content, including movies, TV shows, and sports events in his preferred language.
2. Language-Specific Subtitles: Rajesh values the availability of subtitles in his regional language for better comprehension and enjoyment of content.
3. Seamless Streaming Experience: Rajesh desires a platform that provides smooth streaming, minimal buffering, and high-quality video playback to enhance his viewing experience.
4. Timely Release of Regional Content: Rajesh expects timely availability of the latest regional movies, TV shows, and sports events on the platform, ensuring he doesn't miss out on the regional entertainment scene.

- **Persona 2 – Ravi - The technical challenged user**

Characteristics:

1. Limited Technical Knowledge: Ravi has limited technical knowledge and may face challenges navigating and troubleshooting issues related to digital platforms and applications.

2. Content Preferences: Ravi enjoys a mix of regional language content, movies, TV shows, and sports events. He seeks an accessible and user-friendly platform to fulfill his entertainment needs.
3. Cost-Conscious: Ravi is conscious of his spending and seeks value for money. He expects the platform to provide a reliable and seamless experience in exchange for the subscription fee.

Behavior:
1. Technical Troubleshooting: Ravi may encounter technical challenges while using the Hotstar app, such as app crashes, slow performance, or buffering issues. He may attempt basic troubleshooting methods or seek assistance from friends or family to resolve these issues.
2. Limited App Exploration: Due to limited technical knowledge, Ravi may not actively explore the features or settings of the Hotstar app. He primarily uses the app to access specific content rather than diving deep into its functionalities.
3. Seek Guidance and Support: When faced with technical challenges, Ravi seeks guidance and support to resolve issues. He may reach out to customer support or search for online resources that provide step-by-step solutions.
4. Adapting to Connectivity Constraints: Ravi is accustomed to intermittent internet connectivity or slower internet speeds in his location. He adapts to these constraints and expects the Hotstar app to function reasonably well within these limitations.
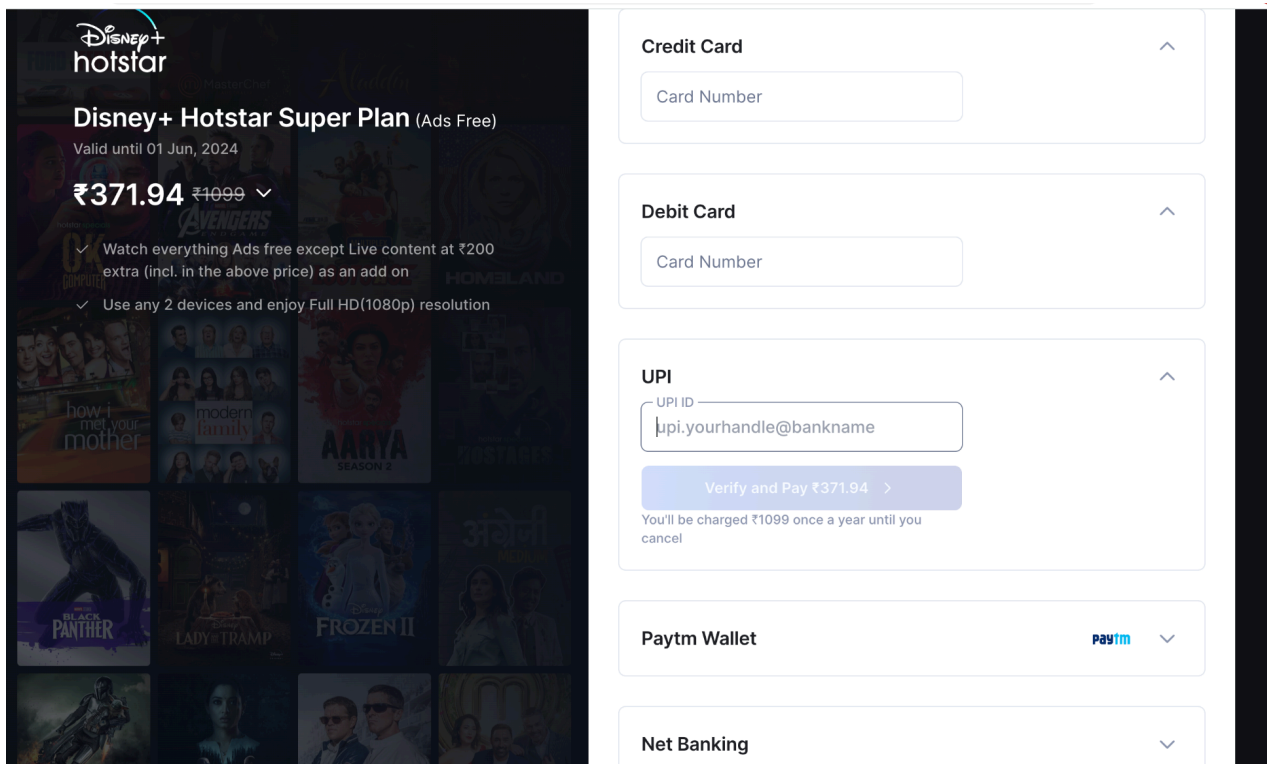
Needs:
1. User-Friendly Interface: Ravi requires a user-friendly interface that is easy to navigate and understand. He seeks a clear layout and intuitive design to access and discover content without confusion.
2. Reliable Streaming: Ravi desires a reliable streaming experience with minimal buffering and smooth playback, even with lower internet speeds. He expects the app to adapt to connectivity constraints and deliver a consistent viewing experience.
3. Simple Troubleshooting Solutions: Ravi requires simple troubleshooting solutions within the app or easily accessible support resources to address technical issues independently. Clear instructions and guidance can help him overcome challenges without external assistance.
4. Cost-Effective Solution: Ravi expects the Hotstar app to justify the subscription cost by providing a seamless streaming experience, minimizing technical glitches, and offering a wide range of quality content.

The target group is the tier 2 or 3 users where users are
.

3. **User Problems**
    1. **Limited Payment Options**: Users may face difficulties or limitations when it comes to payment options. If Hotstar does not support popular or convenient payment methods for users, such as local digital wallets or alternative payment systems, it can discourage potential subscribers from making the payment.

    2. **Technical or User Experience Issues:** Users may face technical glitches, streaming problems, or have a poor overall user experience on the platform. If these issues persist and hinder the enjoyment of the content, users may be discouraged from becoming paid subscribers.
    3. **Limited Regional language Content** - There is not much regional content based on the users preferences.
    4. **User Interface and Navigation:** Some users find the user interface of Hotstar to be confusing or unintuitive, making it difficult to navigate through the platform and find desired content. Complex menu structures or inadequate search functionality can hinder the user experience.
    5. **High Subscription cost** - The pricing is not feasible for the Indian market segment in tier 2 or 3 cities. They find it very costly to avail for the subscriptions.

Disney+ Hotstar Plan Name	Price	Benefits
Disney+ Hotstar (No Subscription)	Free	Select Movies with ads
		Select TV Shows with ads
		5 minutes of live cricket streaming
Disney+ Hotstar Premium	Rs 1499 per year	All content (movies, TV shows, specials, live sports)
		Ad-free movies and TV shows (except sports)
		Watch on up to 4 devices
		Up to 4K (2160p) resolution
		Dolby 5.1 Audio
Disney+ Hotstar Super	Rs 899 per year	All content (movies, TV shows, specials, live sports)
		Ad-supported content
		Watch on up to 2 devices
		Up to Full HD (1080p) resolution
		Dolby 5.1 Audio
Disney+ Hotstar Premium Monthly	Rs 299 per month	All content (movies, TV shows, specials, live sports)
		Ad-free movies and TV shows (except sports)
		Watch on up to 4 devices
		Up to 4K (2160p) resolution
		Dolby 5.1 Audio

6. **Lack of Subtitle Options:** Users who prefer subtitles or closed captions may find that certain content on Hotstar lacks subtitle options. This can be a barrier for viewers who rely on subtitles for accessibility

or language comprehension. Subtitles translation to desired languages by the user is also missing which makes it inconvenient for the users to watch the content.

4. Prioritisation of User Problems

Prioritisation of the user problems is done based on density vs impact vs frequency study.

Density: How many people are likely impacted by the problem?

Intensity: Level of impact (High, Medium, Low for each pain point)

Frequency: How frequently do they face the problem? (High, Medium, and Low for each pain point)

The first problem is Limited Regional language content

The second problem is Technical or user experience issues

The third problem is Lack of subtitle options

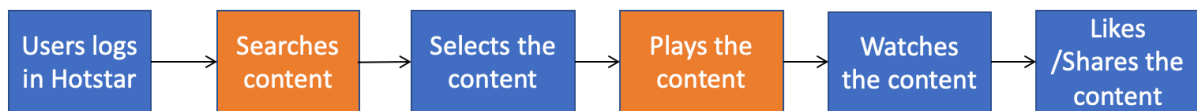| #	Problems	Density	Intensity	Frequency	Ranking
1	Limited payment methods	Low	Low	Medium	4
2	Technical or user experience issues	High	Medium	Medium	2

3	Limited Regional language content	High	High	High	1
4	User Interface issues	Low	Medium	Medium	5
5	High Subscription cost	Medium	Medium	Low	6
6	Lack of subtitle options	High	Medium	High	3

5. Root-Cause Analysis

Why are users not converting from free to paid users?

The user journey of the Hotstar :

Users logs in Hotstar → Searches content → Selects the content → Plays the content → Watches the content → Likes /Shares the content

While searching for fresh and new content in the regional languages could be a problem for the users. Also, not able to find the correct subtitles in the regional language is an issue for the user.

Users often encounter buffering or streaming problems, where the video playback pauses or buffers frequently. This can disrupt the viewing experience and lead to frustration.

Users occasionally encounter technical glitches or app instability, such as crashes, slow performance, or login issues. These issues can disrupt the user experience and may require troubleshooting or app updates.

Users find it difficult to trust the payment methods and mostly rely on cash as a source of availing services.

6. Impact

The below problems stated will impact user and business problems:

1. **Technical or User Experience Issues**

    User Impact:

    1. Frustrated User Experience: Technical or user experience issues in Hotstar can lead to frustration for users. Issues such as frequent app crashes, slow performance, or buffering problems can disrupt the viewing experience and hinder users from enjoying their content seamlessly.
    2. Reduced Engagement and Usage: Users may become disengaged or discouraged from using Hotstar if they consistently encounter technical issues. This can result in reduced usage of the platform, as users may seek alternative streaming services that provide a smoother and more reliable experience.
    3. Negative Perception and Dissatisfaction: Technical issues can create a negative perception of Hotstar among users. Users may perceive the platform as unreliable or lacking in quality, leading to dissatisfaction and a potential loss of trust in the brand.
    4. Churn and Customer Loss: Users who experience persistent technical or user experience issues may decide to cancel their subscriptions or discontinue using Hotstar altogether. This can result in customer churn and loss of recurring revenue for the business.

    Business Impact:

    1. Decreased User Retention: Technical issues can contribute to higher churn rates and reduced user retention for Hotstar. Users who have a poor experience are less likely to continue their subscriptions or recommend the platform to others, impacting the platform's long-term growth.
    2. Negative Word-of-Mouth: Unsatisfactory user experiences can lead to negative word-of-mouth, where users share their frustrations and discourage others from using Hotstar. This can hinder user acquisition efforts and negatively impact the platform's reputation in the market.
    3. Competitive Disadvantage: In a highly competitive streaming industry, technical issues can put Hotstar at a disadvantage compared to competitors. Platforms that offer a more reliable and seamless user experience may attract users who have been dissatisfied with Hotstar's technical performance.

4. Cost of Customer Support: Technical issues often result in increased support requests from users. This places a burden on customer support teams, requiring additional resources to address and resolve user concerns, leading to higher operational costs for the business.

2. Limited Regional language Content

User Impact:
1. Content Preference Mismatch: Users who primarily consume content in regional languages may feel a lack of options or limited availability of regional language content on Hotstar. This can result in a mismatch between their content preferences and the offerings on the platform, leading to reduced engagement and satisfaction.
2. Exclusion of Regional Language Viewers: Users who predominantly seek regional language content may feel excluded or underserved if Hotstar does not adequately cater to their language preferences. This can lead to a loss of interest in the platform and users seeking alternative sources for their desired regional language content.
3. Reduced Relevance: Limited regional language content can diminish the relevance of Hotstar among users who prioritize consuming content in their native or preferred regional languages. They may perceive Hotstar as catering more to mainstream or national language content, which may not align with their interests and preferences.
4. Language and Cultural Connection: Regional language viewers often seek content that reflects their cultural heritage and local narratives. Limited regional language content on Hotstar can impact their ability to connect with their language and cultural identity, resulting in decreased engagement and a sense of disconnect.

Business Impact:
1. User Acquisition and Retention: Limited regional language content can hinder user acquisition and retention, particularly among regional language viewers. Hotstar may struggle to attract and retain these users who have a strong affinity for content in their regional languages, leading to missed opportunities for growth.
2. Competitor Advantage: Competing streaming platforms that offer a robust collection of regional language content can gain a competitive advantage over Hotstar. Users seeking regional

language content may opt for platforms that provide a more extensive selection, resulting in potential user loss for Hotstar.
3. Market Penetration: Limited regional language content can limit Hotstar's ability to penetrate and expand into specific regional markets. It may face challenges in capturing user attention and competing with local and regional streaming services that prioritize language-specific content.
4. Brand Perception: Hotstar's brand perception among regional language viewers can be negatively impacted if they perceive the platform as not adequately catering to their content preferences. This may lead to a weakened brand perception and reduced trust among regional language users.

3. Lack of subtitles

User Impact:
1. Accessibility: Subtitles play a crucial role in making content accessible to individuals who are not fluent in the language used in the content. Without subtitles in regional languages, users who rely on them may face difficulties in understanding the dialogue or narrative, leading to a loss of enjoyment and engagement with the content.
2. Inclusion: Hotstar users who are native speakers of regional languages may feel excluded or underserved if there are no subtitles available in their preferred language. This could create a sense of disconnect and discourage them from using the platform, leading to a loss of potential user base.
3. Language Barrier: Subtitles help bridge the language barrier by allowing users to watch and comprehend content in languages they are not familiar with. When regional language subtitles are not provided, it limits the ability of users to explore and enjoy content in different languages, potentially reducing their overall satisfaction with the platform.

Business Impact:
1. User Retention: Lack of subtitles in regional languages can negatively impact user retention rates for Hotstar. Users who encounter difficulties in understanding content may be more likely to switch to competing platforms that provide subtitles in their preferred languages. This can lead to a loss of loyal customers and decreased user engagement on the platform.
2. Market Expansion: By offering subtitles in regional languages, Hotstar can tap into a wider user base, especially in regions with diverse linguistic backgrounds. This can attract new users who

prefer consuming content in their native languages, potentially increasing market reach and revenue opportunities.

3. Competitive Advantage: Subtitles in regional languages can give Hotstar a competitive edge over other streaming platforms that may not offer similar language support. By catering to a more diverse audience, Hotstar can differentiate itself and attract users who value content accessibility and inclusivity.

4. Brand Image: Providing subtitles in regional languages demonstrates Hotstar's commitment to inclusivity and cultural diversity. This can enhance the platform's brand image, as users perceive the company as more considerate and responsive to their linguistic needs. Positive brand perception can lead to improved customer loyalty and positive word-of-mouth recommendations.

Solution Space

1. **Problem Identified :**

   Limited Regional language content

   Proposed solutions :

   Regional Content Recommendations: Hotstar can enhance its recommendation algorithms to prioritise regional language content based on user preferences and viewing habits. By understanding the content preferences of users from tier 2 and 3 cities, Hotstar can provide personalised recommendations that highlight relevant regional language content.

2. **Problem Identified :**

   Technical or user experience issues

   Proposed solutions :

1. **Optimization for Lower Internet Speeds:** Hotstar can optimise its streaming technology to accommodate lower internet speeds prevalent in tier 2 and 3 cities. Implementing adaptive streaming techniques can ensure a smooth playback experience and minimise buffering, even with limited bandwidth.

2. **Lite Version of the App**: Developing a lite version of the Hotstar app specifically designed for users with lower-end devices or slower internet connections can help improve performance and reduce resource consumption. This lightweight version should prioritise essential features and offer a streamlined user experience.

Implementation Details

User Flows

(A) Regional content recommendations
Improved Content Discovery:
a. User opens the Hotstar app and navigates to the home screen.
b. Hotstar app displays a diverse range of content, including regional language movies, TV shows, and sports events, on the home screen.
c. Users scroll through the recommendations and personalised content sections to discover regional language content aligned with their preferences.

Recommendations and Personalization:
a. Hotstar app uses algorithms and user preferences to provide personalised recommendations for regional language content.
b. User interacts with the recommendations, such as liking, adding to watchlist, or sharing, to further refine the recommendations.
c. Hotstar app updates the personalised recommendations based on user interactions, ensuring a customised content discovery experience.

Exclusive Regional Content:
a. User explores the "Exclusive Regional Content" section, which showcases original programming, regional language web series, and documentaries produced by Hotstar.
b. User can access exclusive regional language content, watch trailers, read descriptions, and select content of interest for streaming.

(B) Machine Translation and AI
a. User opens the Hotstar app and selects streaming content.
b. User selects the subtitles button and chooses the preferred language
c. The preferred language subtitles are created and the user adds it to the video streaming content.
c. User experiences improved content experience where they are able to comprehend the content without any hassles.

(C) Offline Viewing Capability

1. User Discovers Offline Viewing Feature:
   - The Hotstar user belonging to a tier 2 or 3 city opens the Hotstar application on their device.
   - They navigate to the main menu or settings section of the app.
2. Accessing Offline Viewing Settings:
   - In the settings menu, the user looks for the option related to offline viewing or downloads.
   - They tap on the offline viewing option to access the related settings.
3. Enabling Offline Viewing:
   - The user finds the toggle or checkbox to enable offline viewing.
   - They switch it on to activate the offline viewing capability.
4. Selecting Content for Offline Viewing:
   - The user browses through the available content on Hotstar.
   - They choose a video or TV show episode they want to watch offline.
5. Downloading Content:
   - The user opens the selected video or episode page.
   - They locate the download button or icon, displayed near the title or thumbnail.
   - The user taps on the download button to initiate the download process.
6. Monitoring Download Progress:
   - The user is presented with a progress indicator that shows the download status.
   - They can monitor the download progress, ensuring the content is being saved to their device.
7. Accessing Downloaded Content:
   - Once the download is complete, the user can access their downloaded content.
   - They can navigate to the downloads section of the Hotstar app, usually in the main menu or a designated tab.
8. Playing Downloaded Content Offline:
   - The user selects the downloaded video or episode they wish to watch.
   - They tap on the play button or thumbnail to start playback.
9. Enjoying Offline Viewing:
   - The user can now watch the downloaded content offline, without requiring an internet connection.
   - They can enjoy their favorite shows or videos at their convenience, even in areas with limited or no internet access.
10. Managing Downloads:
    - The user has the option to manage their downloaded content.

- They can delete downloaded videos to free up storage space or remove content they have already watched.

Product functionality details and edge cases

(A) Regional Content Recommendations

1. Improved Content Discovery:

Hotstar app employs advanced recommendation algorithms that consider user preferences, viewing history, and regional language selections to provide personalized content recommendations.
Content discovery features include curated collections, popular regional language picks, and trending regional language content categories.
Search functionality allows users to explore regional language content by specific genres, actors, directors, or keywords.
Users can save regional language content to their watchlist for easy access later.

> **Edge Case:** If a user's viewing history doesn't align with their regional language preferences, the recommendation algorithm can adapt and present a mix of regional and non-regional language content to provide a balanced personalized experience.

2. Recommendations and Personalization:

Hotstar app utilizes machine learning algorithms to understand user preferences and provide personalized recommendations for regional language content.
Users can provide feedback on recommendations, such as liking or disliking content, to further refine the algorithm's suggestions.
Recommendations are refreshed regularly based on the user's evolving preferences and viewing behavior.

> **Edge Case:** If a user's viewing habits indicate interest in a particular regional language genre or theme that is less popular or available, the app can suggest related or alternative content options to cater to the user's preferences.

3. Exclusive Regional Content:

Hotstar app features exclusive regional language content, including original regional language web series, documentaries, and reality shows.
Users can access trailers, descriptions, and episode guides for exclusive regional language content.
Notifications and updates inform users about the release of new episodes or seasons of exclusive regional language shows.

> **Edge Case:** If a user has watched all available exclusive regional language content, the app can provide recommendations for similar content or upcoming releases in the user's preferred language.

(B) Machine Translation and AI

1. **Language Selection:**
   - Hotstar allows users to choose the desired regional language for which they want subtitles to be generated.
   - Users can select from a range of regional languages available in the product's language library.
2. **Automated Subtitle Generation:**
   - The product utilizes advanced speech recognition and natural language processing algorithms to automatically generate subtitles for audio content in regional languages.
   - It analyzes the spoken dialogue and converts it into text form, synchronized with the video or audio.
3. **Synchronization and Timestamping:**
   - The generated subtitles are synchronized with the audio or video content, ensuring accurate timing and alignment.
   - Each subtitle is timestamped to match the corresponding audio segment, allowing users to follow the dialogue seamlessly.
4. **Styling and Customization:**
   - The product offers options to customize the styling and appearance of the subtitles, such as font size, color, and positioning.
   - Users can adjust the subtitle settings according to their preferences and viewing comfort.
5. **Dynamic Subtitle Placement:**
   - The product intelligently places subtitles on the screen, taking into consideration the video's visual elements and avoiding obstruction of essential content.
   - Subtitles are positioned in a way that maximizes readability and minimizes interference with the video content.
6. **Editing and Corrections:**
   - Users have the ability to edit or correct the automatically generated subtitles.
   - They can make adjustments to the text, timing, or formatting to ensure accuracy and improve the overall quality of the subtitles.
7. **Real-Time Preview:**
   - The product provides a real-time preview of the generated subtitles, allowing users to see how they appear alongside the video content.
   - This enables users to make immediate adjustments or corrections, ensuring the subtitles meet their expectations.
   - **Edge Cases:**

1. **Accents and Dialects:**
   - The product should be designed to handle a variety of regional accents and dialects within a particular language.
   - It should have robust speech recognition capabilities to accurately transcribe diverse speech patterns, ensuring subtitles are generated correctly.
2. **Background Noise:**
   - The product should account for background noise or poor audio quality, which may impact the accuracy of speech recognition.
   - Noise reduction algorithms can be implemented to minimize the impact of background noise on subtitle generation.
3. **Multiple Speakers:**
   - When there are multiple speakers in the content, the product should be able to distinguish and assign subtitles to each speaker correctly.
   - Speaker identification algorithms can be employed to differentiate between speakers and provide clear attribution of dialogue.
4. **Ambiguous or Inaudible Speech:**
   - In cases where the speech is unclear or indistinct, the product should handle such instances gracefully.
   - It can display markers or placeholders to indicate unclear speech or provide an option for users to flag and manually enter the text for those parts.
5. **Font and Display Compatibility:**
   - The product should ensure compatibility with various screen sizes, resolutions, and devices to ensure legibility and proper display of subtitles.
   - It should support a wide range of fonts that are readable and suitable for the chosen regional language.

(C) Offline Viewing Capability

Content Download:

Hotstar app allows users to download select movies, TV shows, or episodes for offline viewing.
Users can browse the content library and identify downloadable content through the presence of a download button or icon.
The app provides options to select video quality and manages available storage space to optimize the download experience.

Edge Case:

If a user's device runs out of storage space during the download process, the app can display a notification or prompt the user to free up space or select a lower video quality to continue the download.

Download Management:

Hotstar app features a download manager section where users can view, organize, and manage their downloaded content.

Users can access the download manager to pause, resume, or delete downloaded content as per their preferences.

The app provides indicators to show the download progress and completion status of each downloaded item.

Edge Case:

If a user encounters an interruption in the download process due to a network error or device shutdown, the app can automatically resume the download when the user reconnects to the internet or restarts the device.

Offline Playback:

Hotstar app allows users to access their downloaded content for offline playback without an internet connection.

Users can navigate to the downloaded content section and select the desired item to start playback.

The app ensures smooth playback by utilising local device resources, without the need for an active internet connection.

Edge Case:

If a user attempts to play downloaded content that has become expired or requires a subscription renewal, the app can display a notification and provide options to renew the subscription or delete the expired content.

Expiration and Renewal:

Hotstar app includes an expiration feature for downloaded content to ensure compliance with licensing agreements.

The app manages the expiration dates of downloaded content and displays notifications to inform users about upcoming expirations.

Users can renew their subscription or delete expired content to maintain an updated collection of downloadable content.

Edge Case:

If a user faces difficulty in renewing their subscription or encounters errors while deleting expired content, the app can provide clear error messages with troubleshooting steps or prompt the user to contact support for further assistance.

Download Queue and Background Downloads:

Hotstar app supports download queue functionality, enabling users to queue multiple downloads for offline viewing.

The app allows background downloads, allowing users to continue using the app while downloads are in progress.

Users can prioritize or rearrange the download queue as per their preference.

Edge Case:

If a user experiences a sudden interruption in the download queue due to a network disconnection or app crash, the app can automatically resume the interrupted downloads when the connection is restored or the app restarts.

Metrics and counter metrics

(A) Regional Content Recommendations

North Star Metric:

Monthly Active Users (MAU) Engaging with Recommended Regional Content"

L1 Metrics:

The L1 metric for the Regional Content Recommendations solution is the Click-Through Rate (CTR) on the recommended regional content. It measures the percentage of users who click on the recommended regional content after it is presented to them. The CTR indicates the effectiveness of the recommendation algorithm in capturing user interest and enticing them to explore the recommended regional content further.

Counter Metrics:

The counter metric for the Regional Content Recommendations solution is the Content Abandonment Rate (CAR) for recommended regional content. CAR measures the percentage of users who abandon or stop watching the recommended regional content after initially engaging with it. It reflects the user's lack of interest or dissatisfaction with the content suggested by the recommendation algorithm.

(B) Machine Translation and AI

North Star Metric:

Accuracy of subtitles generation

Speed

Error Rate

L1 Metrics:

Subtitles Success Rate

Counter Metrics:

Subtitles Failure Rate

(C) Offline Viewing Capability

North Star Metric:

Offline Content Consumption Time

L1 Metrics:

Downloaded Content Playback Rate

Counter Metrics:

Offline Content Expiration Rate