

BUSINESS INTELLIGENCE ASSIGNMENT

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- 1) With Jio coming in, we have seen an influx of internet users from Tier 2 and Tier 3. Video/Content apps like YouTube and Tiktok have seen a huge growth while Amazon/Flipkart haven't seen similar. What could be the reason for it?**

“Consumers in India have an appetite for video content, regardless of medium,” senior researcher Jeane Han.

National 4G network for Reliance Jio, which charges pennies for data, is bringing hundreds of millions online for the first time. Today, Reliance Jio has **387.5 million subscribers** (As of 31 December 2019) who, on average use about 1 GB of data per day. Consumers in India pay some of the lowest rates for mobile data in the world, which has led to a massive increase in digital viewership among internet users.

Forecast shows a higher-than-expected rise in subscription video-on-demand (SVOD) users in India over the last several years, with the growth rate moderating after an initial influx of internet users in the country.

- Many of the people who have got access to free Internet use it for watching videos, primarily on YouTube. In fact, many publishers — especially those who generate content that will appeal to the free users — are seeing strong growth in their overall revenue generation. This includes creators of film-based content, social media networks, and of course, YouTube itself.
- With easy access to data and the availability of budget Android smartphones, internet users in India began consuming massive amounts of digital content. Adults in India are averaging approximately 5 hours with media a day, and that figure will continue rising as we anticipate high growth rates for time spent with digital.
- Another factor in SVOD user growth is the availability of competitively priced SVOD platforms in India such as Hotstar, owned by Indian media conglomerate Star India. Hotstar, which commands a nearly 70% market share, offers a subscription service at 365 INR (\$5.34) a year and is one of the cheapest annual streaming subscriptions in India. The plan provides ad-free content and access to certain live broadcasts such as cricket and Premier League games. Star India, an Indian media conglomerate, is a wholly-owned subsidiary of the Walt Disney Company India.

- The availability of low-cost SVOD plans like Hotstar also means that the number of pay-TV users in India is decreasing. In 2018, there were 170 million pay-TV users in the country, and this year, that will decrease further to 116.3 million, according to the Telecom Regulatory Authority of India.

With the proliferation of SVOD platforms like Hotstar and Jio TV, video viewers in India now not only have the opportunity to watch the most popular TV content and movies online, but to cheaply watch them whenever and wherever they demand. This benefit will continue to drive the erosion in the number of pay-TV users.

Selling to Indians who live outside cities has long been a challenge. The standard retail outlet in the countryside is a closet-size store, where simple, small, and inexpensive products—soap, cigarettes or snacks—are sold after dribbling their way through multiple middlemen. The result is limited selection, poor quality, and relatively high prices for rural consumers. Traditionally, big purchases have required a long trip to a town or weekly market.

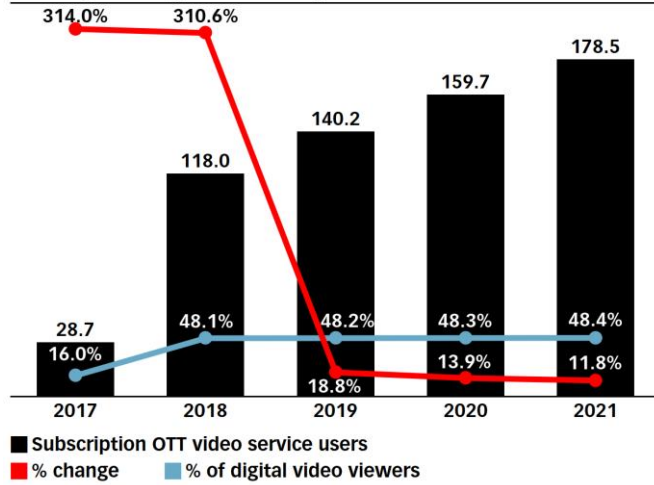
- Now, Amazon and Flipkart are enlisting the small stores as package depots along its distribution network. Other small retailers have become learning centers for new shoppers.
- Both focused on expanding their online commerce to smaller cities and rural areas, an enormous swath of the country known by its historic name of ‘Bharat’.
- Over 65,000 sellers from 500 cities sold products.
- There is a big wave of consumers in *Bharat* shifting their offline spending to online during these sale days, and increasing the ticket size of their purchases.
- Online retailers have been efficiently getting their message about the discounts, the product assortment and affordable credit offerings to the internet users in small cities.

e-Commerce giants recorded almost 50% growth in new customers compared with last year’s sale days, and a 100% increase in units sold to shoppers in Tier-III cities. More than 40 per cent of sellers during the sale days were from Tier-II cities and beyond. “Bharat has moved closer to India in more ways than one.”

However, in 2017, India had 28.7 million SVOD users, which then grew a whopping 310.6% to 118.0 million users in 2018. There was an estimate that there will be 140.2 million users in 2019, which is expected to grow to 159.7 million by the end of 2020 which still beats the e-Commerce giants.

Subscription Over-the-Top (OTT) Video Service Users in India, 2017-2021

millions, % change and % of digital video viewers

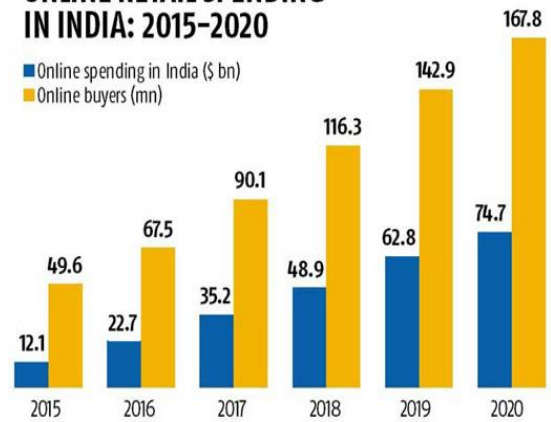


Note: Individuals of any age who watch video via any app or website at least once per month that provides paid subscription access to streaming video content over the internet and bypasses traditional distribution; examples include Amazon Prime Video, HBO Now, Hulu, Netflix, SlingTV and YouTube Red; includes overlap between video services

Source: eMarketer, September 2019

ONLINE RETAIL SPENDING IN INDIA: 2015-2020

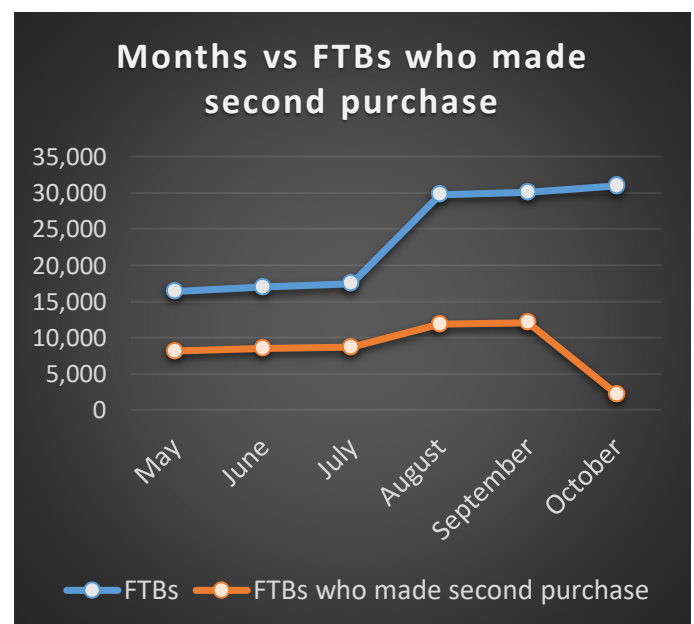
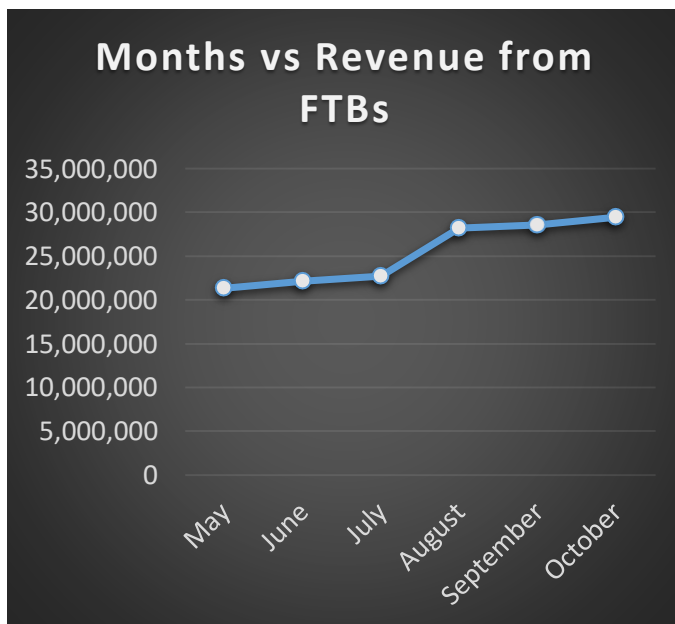
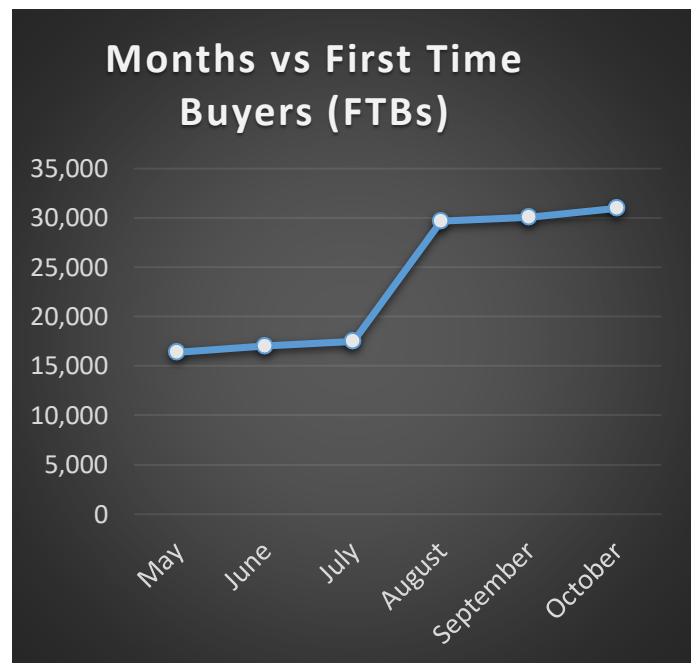
■ Online spending in India (\$ bn)
 ■ Online buyers (mn)



Source: Forrester research online retail forecast, 2015-2020, Asia-Pacific

2) New Onboarding Design at Nymtra

Question: Is the onboarding flow revamp a success? Justify.



- The number of new installs move upward steadily in the past 6 months.
- An increasing trend can be observed in the number of First Time Buyers (FTBs).
- The number of FTBs surged in the month of August, indicating that after the onboarding flow revamp there has been a 70% increase in the number of buyers.
- The Revenue from FTBs saw constant growth for the first three months.
- After the launch of onboarding flow revamp there has been a 24% increase in the first month of revamp.
- While the number of FTBs who made a second purchase soar up by about 36% by the end of August, there has been a dip of 81% by the end of October.

Concluding, it can be seen evaluated that the onboarding flow revamp was a success.

3) Personalized Recommendations at FilmiStar

Questions:

1) What will be the change in user behavior once this feature is introduced?

A lot of times, people don't know what they want until you show it to them: Steve Jobs

Recommenders try to narrow down choices for people by presenting them with suggestions that they are most likely to use.

After the credits are rolled, user is presented with movie recommendations using personalization algorithms are used that aim to accurately predict what users will watch next soon after credits start or, for television shows, they automatically play the next episode.

Users will be able to use:

- When user looks at the homepage, they see ranked titles in a way that is designed to present the best possible ordering of titles that the user may enjoy.
- Enabled post-play, which automatically plays the next episode of a TV show unless the user opts out.
- For movies, show movie suggestions (based on the rating of the movie just watched) right after the credits start rolling and allow users to press play right from that screen.
- Use “thumbs-up thumbs-down” feedback model, replacing the 5-star model.
- In addition to the overall top 10 list, users will also be able to see the top 10 most popular series and top 10 films when you click on the movies and TV shows tabs.
- Add as many profiles as the user needs to keep all favorite shows in one place. It also curates its recommendations and content according to the user's history.

2) What should be the goals and metrics for this feature?

- The **goal** of the Recommender System is to make personalized recommendations helping the user to find shows and movies of interest them using a user's item and profile features.

It focuses on creating a user experience that will seek to improve the retention rate.

Recommender systems function with two kinds of information:

- 1) *Characteristic information*: This is information about items (keywords, categories, etc.) and users (preferences, profiles, etc.).
- 2) *User-item interactions*: This is information such as ratings, number of purchases, likes, etc.

- **Metrics** for recommender systems can be:

- 1) ***Predictive accuracy metrics***- Predictive accuracy or rating prediction metrics embark on the question of how close the ratings estimated by a recommender are to the true user ratings. It is most appropriate for usage scenarios in which an accurate prediction of the ratings for all items is of high importance.
- 2) ***Classification accuracy metrics***- Classification accuracy metrics try to assess the successful decision making capacity (SDMC) of recommendation algorithms. They measure the amount of correct and incorrect classifications as relevant or irrelevant items that are made by the recommender system and are therefore useful for user tasks such as finding good items.
- 3) ***Rank accuracy metrics***- A rank accuracy or ranking prediction metric measures the ability of a recommender to estimate the correct order of items concerning the user's preference, which is called the measurement of rank correlation in statistics. Therefore, this type of measure is most adequate if the user is presented with a long ordered list of items recommended to him.

4) **Non-accuracy metrics**- When recommending items to users, it is important to consider many performance metrics and not just the accuracy of a rating.

The metrics here include:

- *Diversity*: How dissimilar are the recommendations?
- *Coverage*: What percentage of the user-item space can be recommended?
- *Serendipity*: How surprising are the relevant recommendations?
- *Novelty*: How surprising are the recommendations in general?
- *Relevancy*: How relevant are the recommendations?

3) How should this feature be launched and evaluated?

Launch-

- As part of the launch, FilmiStar should ask its users to rate their interest in movie genres and rate any movies they've already seen. This will help the Recommender System to train and personalize the recommendations for the particular user.

Evaluation-

- *Offline evaluation in academic world*, searching for low prediction errors (RMSE/MAE) and high Recall/Catalog coverage
- *Online evaluation in business world*, searching for high Customer Lifetime Values (CLV), going through A/B-testing, CTR, CR, ROI, and QA.
 - The easiest measures are the **Click-Through Rate (CTR)** and the **Conversion Rate (CR)** of the recommendations.
 - In the **Empiric evaluation** the Recommender Systems you just start a new session with empty cookies, simulate the behavior of a user and check whether the recommendations are sane.

A Recommendations System with high empirical quality and a reasonably positive Return of Investment (ROI) is desirable.