

Case Study - Streaming Platform

Retention Rates



Case

A video streaming company started a subscription model in January, 2015. We would like to understand the subscription model.

Ones of the relevant questions to answer:

- *How can we predict monthly retention rate for the different subscription price points ?*
- *For each price point, what percentage of users is still subscribed after at least 12 months?*
- *How do user country and source affect subscription retention rate? What could improve the company revenue?*

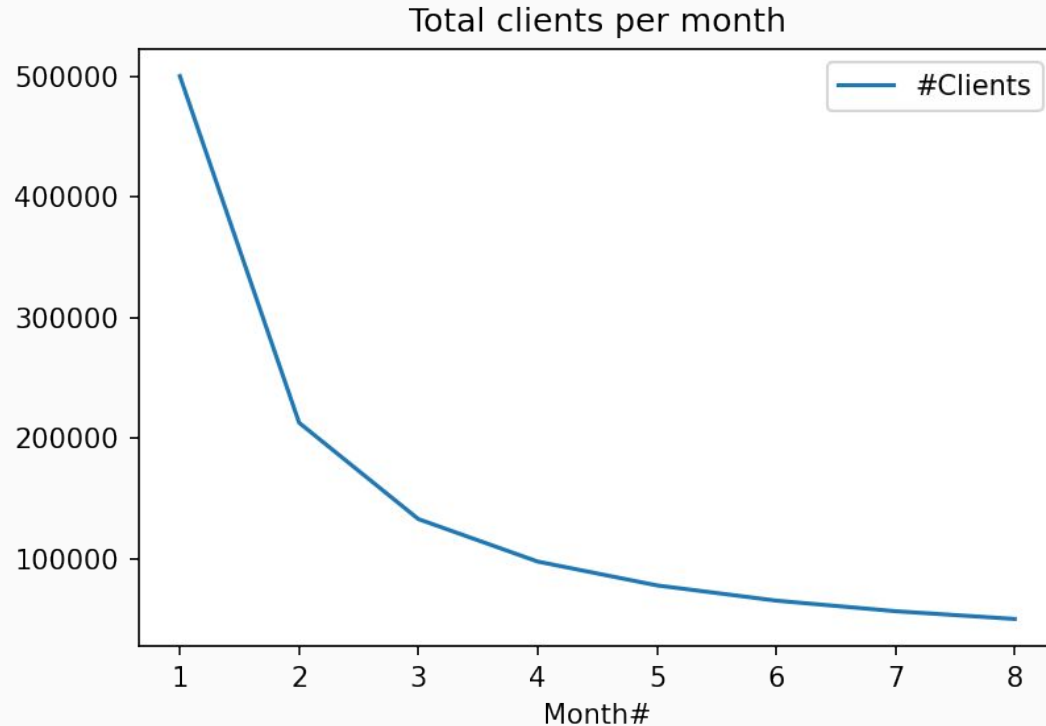
Data

Data for each user signed up in January 2015

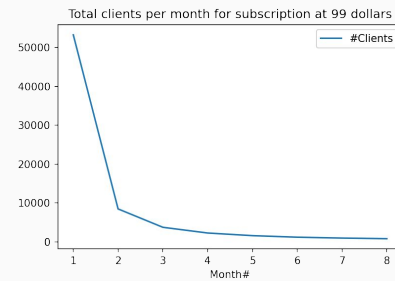
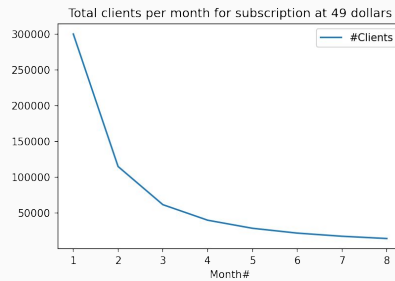
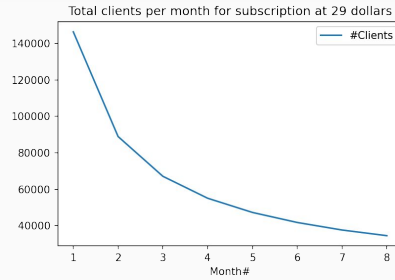
- *Subscription cost: 29, 49 or 99 dollars per month*
- *Country*
- *How the user came to the website before subscribing: SEO/Ads/Friend Referral*
- *How many months the user has been subscribed (within the first 8 months)*

Prediction of monthly retention rate

The steep drop can be caused by subscription promotions such as free months trials.



Prediction of monthly retention rate



Prediction of monthly rate of retention

Retention_Overall = Percentage of persisting clients
*#clients at month i / #total of subscriptions in January)*100*

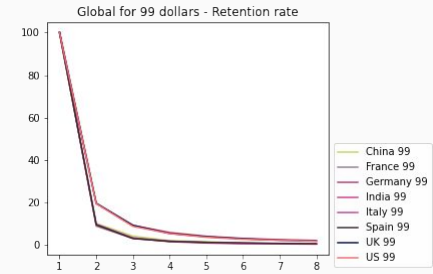
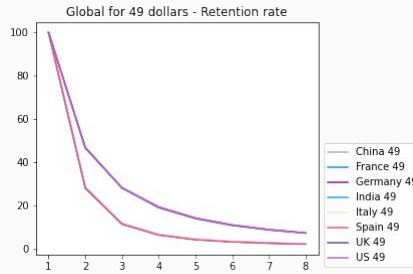
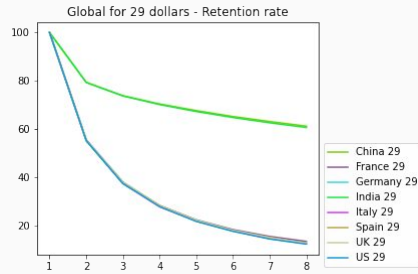
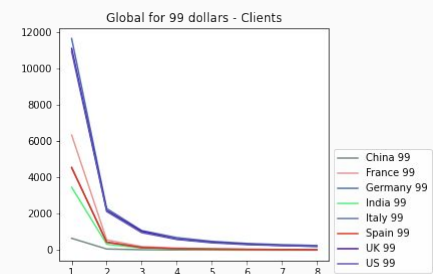
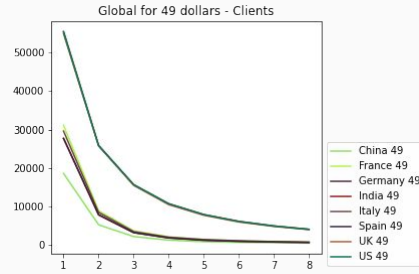
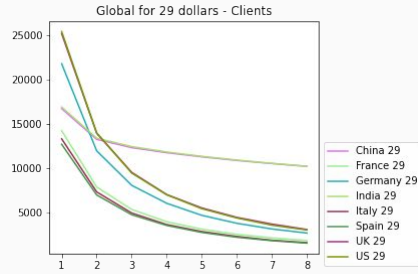
Retention_per_month = Percentage of persisting clients from one month to the next
#clients at month i / #total of subscriptions in January

- A simple model of linear regression gives a good estimation for finding the retention rates from the 9th month after start of subscription with 99% accuracy and is the most coherent fit:
- Note: It could be interesting working on seasonal variations

Month#	Price	#Clients	Retention_overall
3	29	67103	100.0
4	29	55066	82.06190483286888
5	29	47279	70.45735660104614
6	29	41774	62.25355051189961
7	29	37638	56.08989165909125
8	29	34527	51.453735302445494
9	29	30315	45.17681722797043
10	29	27700	41.27982355483362
11	29	25500	38.00128161185044
12	29	23624	35.20557948228842
3	49	61956	100.0
4	49	40266	64.99128413712958
5	49	28978	46.77190264058364
6	49	22251	35.91419717218671
7	49	17846	28.80431273807218
8	49	14673	23.682936277358124
9	49	13473	21.74607786176831
10	49	11964	19.310478404028668
11	49	10758	17.3639356963006
12	49	9773	15.774097746788044
3	99	3729	100.0
4	99	2258	60.55242692410834
5	99	1580	42.37060874229016
6	99	1181	31.670689192813086
7	99	955	25.610083132207023
8	99	799	21.42665593930274
9	99	718	19.254491820863303
10	99	635	17.028694019844462
11	99	569	15.258782515419684
12	99	516	13.837489943684634

Predictions for 9th to 12th month

Global Trends



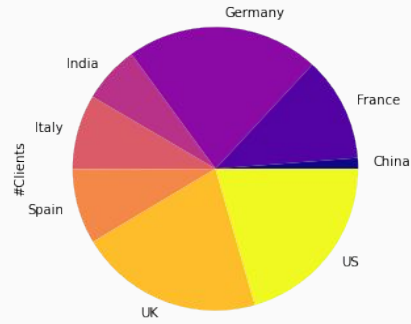
- 29 dollars: China and India have a different pattern and seem to stabilize at 60% and loses 20% in the first 2 months. The rest seems to go down to zero and lose more than 50% in the first 2 months.
- 49 dollars is favored by US and UK compared to other countries. All seem to go down to zero and lose more than 50% in the first 2 months.
- 99 dollars is favored by Germany, US and UK compared to other countries and China has much fewer subscriptions. And goes down to 20% in the first 2 months.

What behavioral patterns might explain this ?

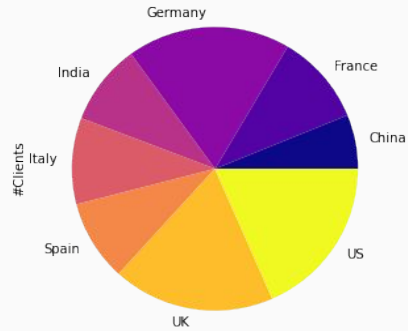
Price is one key aspect, retention is better for cheaper subscriptions.

Per country

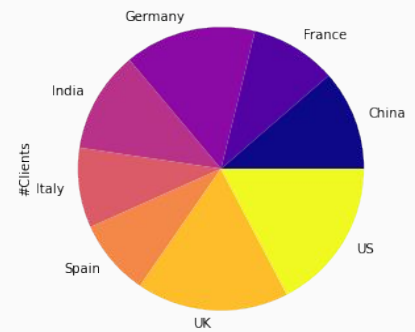
Repartition of #Clients for subscription at 99 dollars



Repartition of #Clients for subscription at 49 dollars



Repartition of #Clients for subscription at 29 dollars



- *Note the small participation of China in the 99 dollars market -*

Sources

- Ads
- Friends referrals
- SEO (Search Engine Optimization)

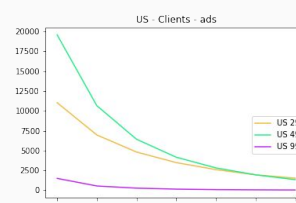
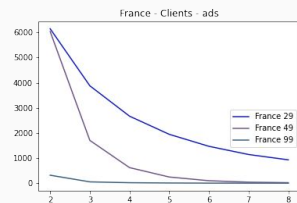
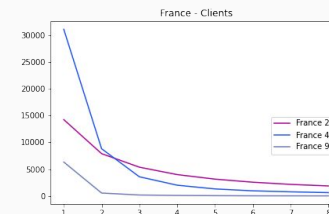
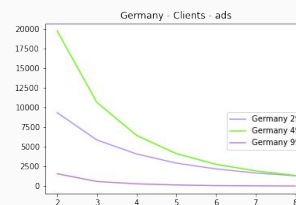
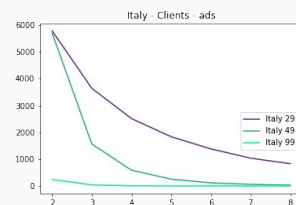
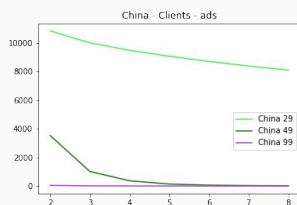
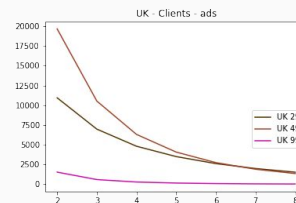
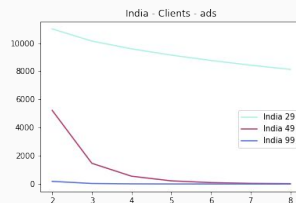
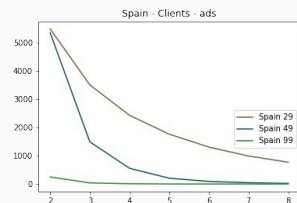
SEO works to get your site higher in the organic rankings so that you rank for customers typing queries applicable to your content. Ads allow you to target particular keyword phrases and then create an ad that promotes your site and content for those using those keywords.

Estimation

Free trials: 30000 people over the course of the two first months - Let's imagine an add campaign of free trials which brings 4 times the number of subscribers: $3 \times 30000 = 90000$ subscribers in addition to those of the regular sequence. The regression function brings 47, 19, 7, 5, 4, 3 % of retention globally for the next months. 83367000 dollars de benefit after removal of 0.1 dollars CPC for 10 times the number of trials as well as not counting the fees for free trial.

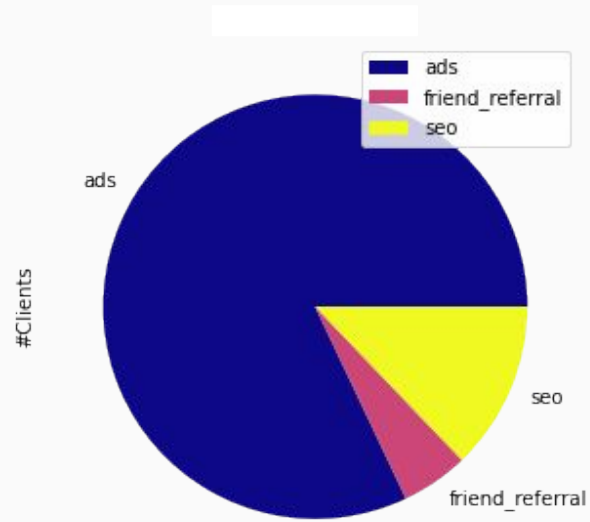
Campagne SEO: 7.9 dollars per click 55860000 dollars benefits with 27930000 costs.

Friends referral: Assuming we can have the predictions over 12 months for India for 29 dollars subscription. As the 49 dollars subscription is retained badly, we could propose an upgrade for the subscription and pass for free in the first two months from 29 to 49 dollars. Assuming the already retaining would half transit back: without computation, assuming the overall retention rate evolution → proposing at month 3 the free upgrade, 30793.052 dollars benefit without another cost than operating costs.



Countries with higher purchasing power seem to favor the 49 dollars subscription. For ads, it stays on top of the others, yet overall, the drop is higher than for the 29 dollars and there remain after 4 months more subscribers for 29 dollars. France, Spain and Italy might culturally prefer the 29 dollars subscription. We might take into account free months trials.

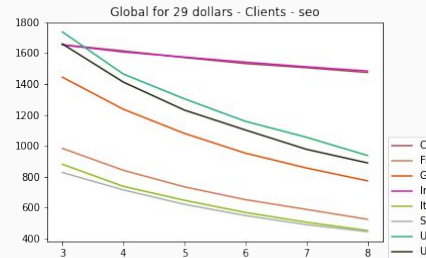
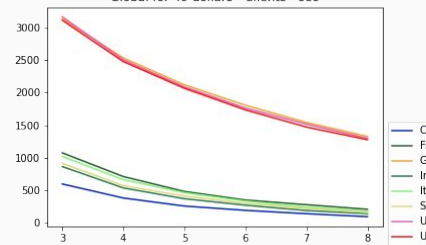
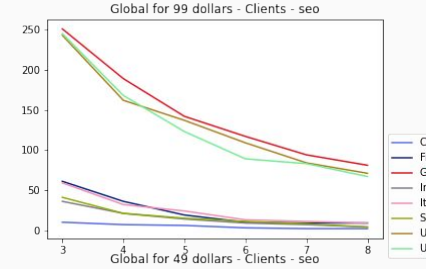
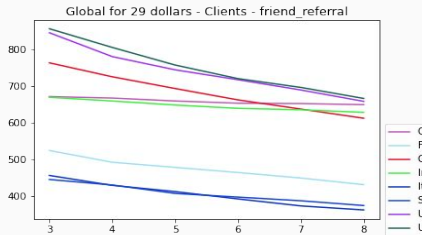
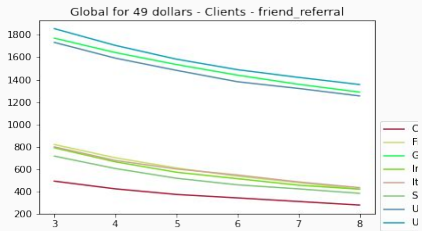
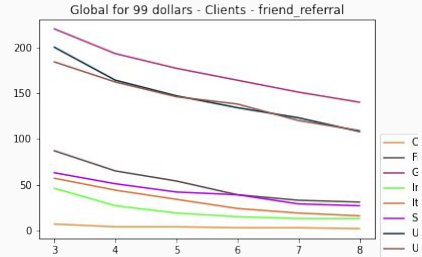
Sources



Ads: It follows the global trend and has variations per country

Sources

Friends referrals and SEO show better results than ads for most countries and some countries respectively



Recommandations

Improvement in data:

- More granular data in order to see what happens in the first weeks
- Segmentation or clustering by type of users in order to target contents better
- phone interviews or questionnaire on samples to understand the reason of drop

Recommandations:

- What type of subscription is favored by country: customized solutions per country (for example subscription at 49 is favored by Germany, China has a much better retention rate for subscriptions at 29 dollars, but start approximately at the same number of clients for 49 dollars)
- For ads: understand what happens in China and India for the subscription at 29 dollars in order to expand the model globally and for other subscriptions prices

Thank you

Questions ?