Group HW 4

Lifetime Value

In October 2017, Neftlix announced plans to increase its regular monthly subscription price by $1, from $9.99 per month to $10.99 per month[1]. At that time, Netflix had approximately 102 million paying subscribers,[2] 54 million in the US alone[3]. It also announced plans to invest $8 billion in original content during the 2018 year. This is a big increase over 2017 ($6 billion) and 2016 ($5 billion). The company explained that it would finance these investments in new content through long-term debt. Netflix's use of debt grew by 45% throughout 2017, bringing its total obligation to $4.9 billion before investing in new content. We would like to build a simple model to evaluate the combination of the proposed price increase and the proposed content investment. We will focus only on the US market for now.

To build a model, assume that Netflix currently adds 0.33 million new customers a month[4]. Assume also that customer retention is 91% per year[5], or approximately 99% per month. When a customer ends her subscription, she is lost permanently (i.e. she will not re-subscribe in future). Finally, assume that Netflix can borrow money at an annual interest rate of 5% or a monthly interest rate of approx. 0.42%. You may get slightly different answers if you solve the problem at an annual level or a monthly level, so for the sake of standardizing answers, please solve the problem at monthly level.

1. Under its current price of $9.99, calculate the lifetime value of a customer and show your work (i.e. write down the expression that you would use to calculate LTV). For more information, refer to the slides on Price Promotions and LTV.

2. Assume that the combination of the price increase from $9.99 to $10.99 and the $2 billion incremental content investment (from $6 billion to $8 billion) will have a neutral net effect on the acquisition and retention rates. How does the

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[1] "Netflix Needs to Feed the Beast," Dan Gallagher, *Wall Street Journal*, 10-17-2017.
[2] "Netflix reels in customers after price hike, sending stock to new high," Mike Snider, *USA Today*, 1-22-2018.
[3] https://www.statista.com/statistics/250937/quarterly-number-of-netflix-streaming-subscribers-in-the-us/ accessed on 1-26-2018.
[4] Netflix had 50 million subscribers by the end of 2016 (https://www.statista.com/statistics/250937/quarterly-number-of-netflix-streaming-subscribers-in-the-us/). Assuming these are unique households, this means that they have 50 of the 126 million US households. Netflix acquired an average of 0.33 million new customers per month between 2016 and 2017, indicating an acquisition probability of 0.43%.
[5] "This stat shows how much Netflix crushes Hulu and Amazon Prime in subscriber loyalty," Nathan McAlone, *BusinessInsider*, 4-15-2016.

price increase to $10.99 change the lifetime value of a customer? Again, show your work like in the previous question.

3. Assume again a neutral effect on the acquisition and retention rates. Netflix typically acquires 0.33 million new US customers in a month. At the end of 2017, it had 54 million US subscribers. What is the lifetime return on investment (in %) of the one-time incremental $2 billion investment in content proposed for 2018? To do this compute the increase in LTV for existing customers AND the increase in LTV of the stream of customers to be acquired in the future at the rate of 0.33 million new customers per month. Assume this money is spent today out of cash. ROI in % = (Total increase in LTV – $2 billion)*100/$2 billion. What do you tell your CFO regarding your proposed investment? Show your work in detail.

Submit on Canvas as PDF: Questions 1-3.