TO LEAD OR NOT TO LEAD?: CHOOSING THE OPTIMAL PRICING MODEL AT ZILLOW NEW CONSTRUCTION

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I. Project Overview

❖ **Goal:**

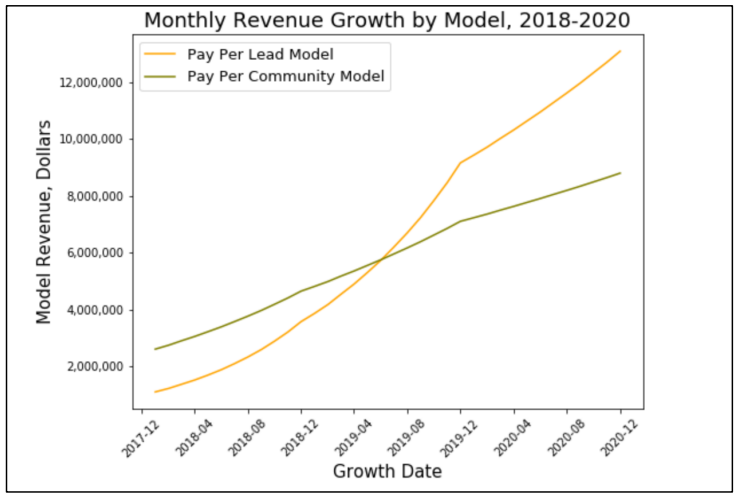
Select Optimal Pricing Model for New Construction listings based on long-term revenue opportunity

❖ **Potential Interested Parties:**

- ❖ Zillow Group Data Science Team
- ❖ Zillow Group Sales leadership
- ❖ Zillow Group Marketing leadership

❖ **Outcome:**

Analyze long term revenue growth from January 2018 to December 2020 for **Pay Per Lead** and **Pay Per Community** pricing model and assess feasibility



II. Data & Process Overview

❖ **Data:**

- ❖ Sources: Decision Science, Sales, Marketing Research, Financial Planning & Analysis
- ❖ Data spans over 36 months from January 2018 till December 2020
- ❖ Market Research Data was interesting but was found to be insufficient for comparative analysis

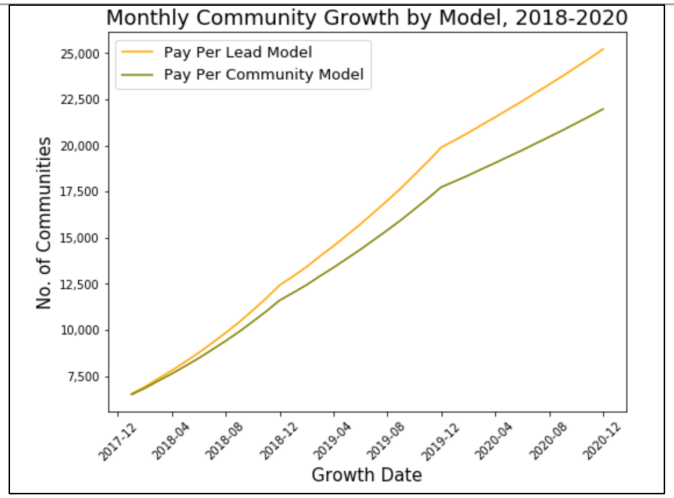
❖ **Process:**

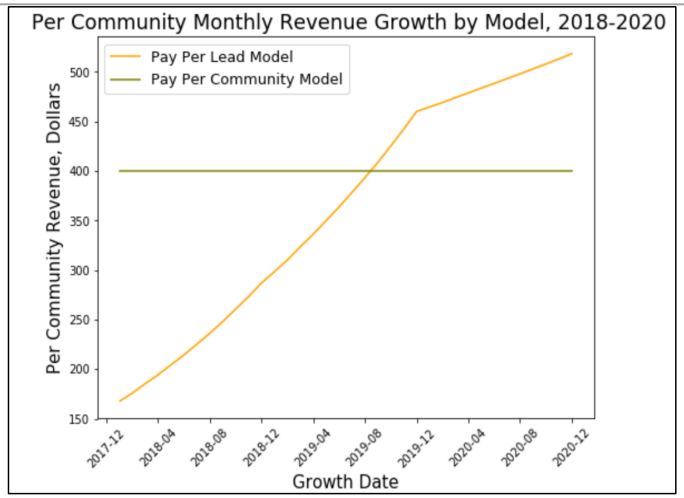
1. 3 Key Metrics selected for each model:
   i. Monthly Community Growth
   ii. Per Community Monthly Revenue Growth
   iii. Monthly Overall Revenue Growth
2. Data generated based on percentage growth rates Month over Month, and cleaned in Python
3. Time Series Analysis of Key Metrics for **Pay Per Lead** vs **Pay Per Community** pricing models

- **6174** New Construction communities advertising on Zillow in Jan 2018
- Zillow delivers **4 Leads/Community/Month** on average to customers
  - **Leads/Community/Month** expected to grow:
    - 2018: 5% MoM growth every month
    - 2019: 4% MoM growth every month
    - 2020: 1% MoM growth every month

- For **Pay Per Lead** Pricing Model
  - Pricing: $40/Lead
  - Zillow Advertising Community Growth expected
    - 2018: 6% MoM growth every month
    - 2019: 4% MoM growth every month
    - 2020: 2% MoM growth every month
- For **Pay Per Community** Model
  - Pricing: $400/Community/Month
  - Zillow Advertising Community Growth = 90% of Pay/Lead (Higher cancellation rate)
    - 2018: 5.4% MoM growth every month
    - 2019: 3.6% MoM growth every month
    - 2020: 1.8% MoM growth every month

III. Analysis: 1



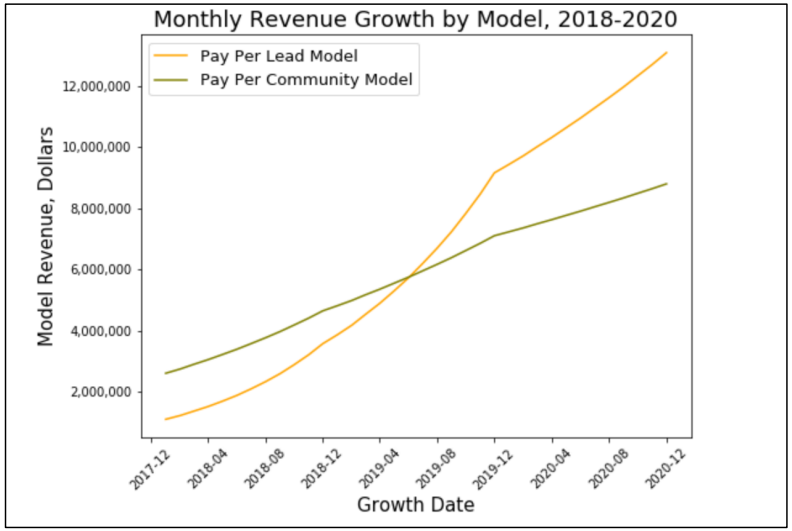


- In December 2020 after MoM growth:
  - **Pay Per Lead** Pricing Model would result in **25,225** communities
  - **Pay Per Community** Pricing Model would result in **21,976** communities

- In December 2020 after MoM growth:
  - **Pay Per Lead** Pricing Model would yield on average **$518** in revenue per community per month
  - **Pay Per Community** Pricing Model would still yield **$400** in revenue per community per month

Analysis: 2

- In December 2020 after MoM growth:
  - **Pay Per Lead** Pricing Model would yield **$13,076,372** in overall revenue
  - **Pay Per Community** Pricing Model would yield **$8,790,313** in overall revenue
  - Pay Per Lead Model would yield **1.5 times** revenue of Pay Per Community Model
- Stark Contrast from baseline revenue in January 2018 (Pay Per Community Revenue = 2.5 times Pay Per Lead Revenue)
- Zillow should select the **Pay Per Lead** Pricing Model to generate more revenue
  - Consistent with prioritizing long-term revenue growth despite losing revenue until mid-2019
  - More Listings = More Leads
  - More Profitability assuming similar operating expenses



But is it really that simple?

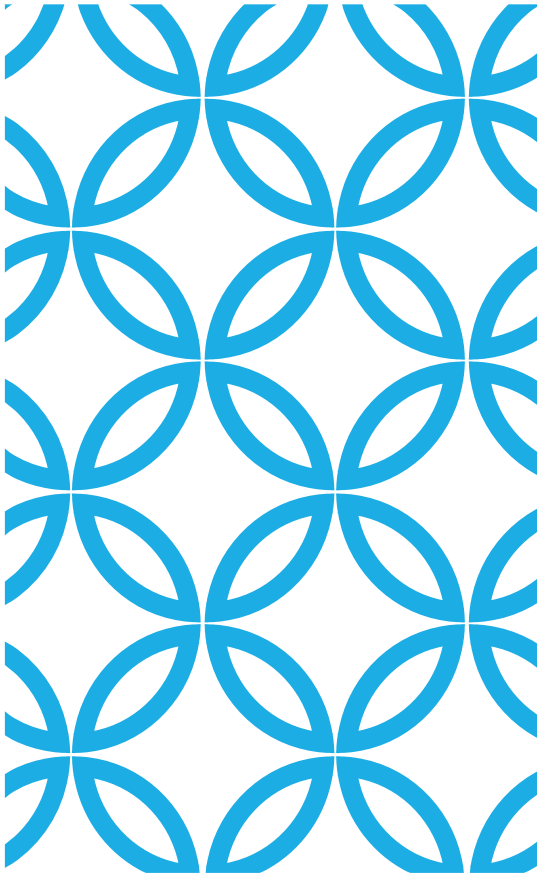
- Strategically, Pay Per Lead Model:
  - Better for: Booming Economy -> More Leads generated -> More Overall Revenue
  - ”On-Demand” service: Customer pays only for what they get while still advertising whole catalog
  - ‘Riskier’ source of revenue but potential for greater profits
- Pay Per Community Model
  - Better for: Relatively Slower Economy -> Less Leads -> More Revenue from flat rate listings
  - “Subscription” service: Customer ends up paying for whole catalog despite transacting with few hot properties
  - Possible missed revenue opportunities but a ‘Safer’ and ‘Steadier’ source during turbulence

- Fixed Rate Pricing Model: UNREALISTIC!
  - Real Estate property costs vary tremendously and fluctuate variably across regions
  - Cannot charge customer same price per lead or per community in

    Beverly Hills, LA and Bountiful, UT
  - Solution: Variable rate model proportional to real estate costs across different communities

IV. Take-Aways

- **Pay Per Lead** Pricing Model works better in the long term to generate more revenue if the Leads keep growing consistently
- Variable Rate Pricing Model based on community location is more practical and feasible
  - Datasets of real estate features across different regions where customers are situated will help determine an appropriate pricing range
  - Using this data, a multiplicative factor that scales according to property costs can be derived to automate the process of setting a variable price range per region. A regression model can be built using the features of houses and locations of existing communities to predict the ideal price rate per lead of listings of communities in new locations
- Selecting an Optimal Pricing Model not as simple as which model makes you more money
  - Datasets having details of communities advertised by individual builders on Zillow or number of builders will help substantiate the expenses they are willing to pay Zillow at a granular level
  - This will help to set a threshold or a practical/reasonable pricing strategy and control customer churn by not overcharging them while working towards maximizing revenue/profits
  - A classifier can then be used to predict if a customer will churn or not based on a rate change in pricing model
  - A/B Testing can also help determine which factors in the model matter the most to customers and test if a change will positively or negatively impact customer experience before pushing it to production



THANK YOU