

# New Construction Pricing Problem



The Zillow Group Pricing Analytics team is trying to settle a hotly contested debate inside the company. Should Zillow's New Construction sales team charge their customers a flat price per Community or per Lead Received? (A Community is a collection of homes owned by a builder. A Lead when is a consumer on Zillow chooses to contact the builder about a specific community)

It is **January 2016** and Zillow current has **6,174 New Construction Communities** advertising and delivers an average of **4.00 Leads per Community per Month** to existing customers.

The team is unified in agreeing on two key priorities:

- 1) Prioritizing long-term revenue opportunity over short-term.
- 2) Providing the best experience for the consumer possible (More listings is better)
- 3) They recommend the following pricing options:
  - \$40/Lead
  - \$400/Community/Month

You've already looked into market research which came back with the following interesting results:

- There are a **total of 38,000 active New Construction** communities in the United States today
- The median sale price of a New Construction home is **\$350,000**
- Of the final sale price, the industry spends on average **1.0% on marketing** and yields an average of **5% profit** after expenses.

You've also asked the Financial Planning and Analysis team for some assistance and they provided you with the following estimates:

- **Leads per Community per Month** are expected to grow at the following rates Month-Over-Month:
  - 2016: 5% MoM growth every month
  - 2017: 4% MoM growth every month
  - 2018: 1% MoM growth every month
- Similarly, Zillow's expected number of New Construction communities advertising on the site is expected to grow at the following rates Month-Over-Month for the Pay Per Lead model:
  - 2016: 6% MoM growth every month
  - 2017: 4% MoM growth every month
  - 2018: 2% MoM growth every month
- However, with the \$400 Price Per Community their model believes that the Community Month-Over-Month growth rate will be only 90% the rate of Price per Lead model as they expect a higher cancellation rate. (For Example:  $6\% \times 0.9$ ;  $4\% \times 0.9$ ; and  $2\% \times 0.9$ )

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## **Candidate Instructions:**

Please complete the exercise using a programming language such as R, Python, SQL, Java, C, Ruby, etc.

**DO NOT** do your work in Excel or Tableau (Though they can be used for visualizing results if desired).

Tests returned using only Excel or Tableau will be disqualified.

Given the information provided above, please suggest the optimal pricing model.

Prepare your results as though you were presenting to an executive team. (Powerpoint, Word, PDF, or similar format). Include data visualizations as necessary to help drive home your recommendation.

Be sure to also answer the following questions:

- 1) How many communities does each method result in for December 2018?
  - 2) What is the overall revenue impact?
  - 3) What strategic advantages do you believe each plan provides? What are the drawbacks of each?
  - 4) Are there any additional concerns or opportunities about your model based on the information provided? Does anything seem unrealistic?
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