Thumbtack Second Round Interview Preparation

**Notes from Recruiter Screen:**

* Analytics Team
  + Click-level data on customer experience
  + Evaluating new business models
  + Cost calculator based on area and needs
  + Split into marketplace, pro, and consumer
* Thumbtack
  + Doubled product and engineering teams last year
  + New rollouts
    - Payment system integration
    - Scheduling with calendar integration
* Why thumbtack
  + Thumbtack Analytics transparent to the customer, not just a mid-way thing; example: Cost calculator
  + Analytics involved in so many different ways; not just a part of business, but really what drives the business
  + Core competency seemed to be analytics (blog post) compared to other places

**Product Research**

**Thumbtack Project**

* Visitors decreasing as weekend approaches – why
  + Motivation to get down to business and visit Thumbtack to get professionals for their jobs (on the consumer side)
  + The process of request -> quote -> match -> planning takes a week so want to plan for that?
    - Accounting for professionals checking for requests on Monday
* Why only receive roughly 2.4 quotes per request?
  + Cost on professionals – use tokens ($$) to submit quotes
  + Consumer requests are pretty specialized
* Why does Moving receive more quotes than Cleaning?
  + More competitive?
  + More money to spend on submitting quotes? Because more profitable? Expected profit – cost
* Pricing
  + Proportional pricing for cleaning – very unstable/skewed distribution
    - How much though (3%)? How did I arrive to that?
      * Considering how much is “fair” to charge to professionals
      * Rev – Cost = 30% of revenue/quote price? So 3% of revenue/quote price is 10% of profit
      * 3% of each quoting price? Or each accepted?
  + Flat pricing for moving – stable/normal distribution
    - Get number of hired per pro in a month (so number of quotes accepted from one pro per month) for each pro, and get the average for that #
      * So we have average number of times hired per pro, per month
      * So that number \* average quote price (maybe separate by scale so there’s not too much spamming of quotes) = amount that professionals make on average per month, and take some proportion of that = flat price per month
        + Note 1:average quote price from quotes that were actually accepted? vs. average quote price from all quotes made?
    - Improvements: Need penalties for too much quoting – maybe do it on a per-quote flat price, not a monthly one
      * Find out on average how much they make per ALL quote (by pros, get sum of quote prices / num ALL quotes) and find this average across all pros
      * So now we have average made per submitted quote
      * Take a proportion of this and charge it as per flat fee?

**Possible Questions**

* Unsuccessful matches
  + 1. Consumer doesn’t accept any quotes
    - Issue in quoting
      * Compare average quote price of a similar job vs. current one – is this an anomaly?
      * If similar, we look towards the professionals themselves
    - Issue in professionals
      * Do the professionals have what the consumers want (word matching)?
      * If not, then why aren’t they quoting (cuz match = higher chance of hired for professionals as well)
        + 1. Job is too specific?
        + 2. Professionals aren’t there?
        + 3. Recommendation algo problems?
      * Reco algo problems – weights on different aspects/questions consumer asked before job request
        + Do consumers consider more on a certain aspect vs. other? How do we weight? A/B Testing?
      * Reco algo problems 2 – is the request going to the right pros?
      * Professionals aren’t there -
  + 2. No quotes are submitted for the job
    - Issue in job requests
* Matching
  + Show requests to pros who have high P(quote |pro, that specific request), use historical data to predict
    - Did the pros respond? How prompt were they to give quotes?
    - Is the pro just a quote-giver, or is he very specialized?

**Questions:**

* Thumbtack
  + Why join Thumbtack?
  + [Something specific to thumbtack]
  + How do you go against large competitors like Upwork?
* Analytics Team
  + Data team – centralized vs. distributed? Pro and cons?
  + Data team internal work process – full stacks, or distributed work process?
    - Projects?
  + What do you expect from interns?
  + Most important skill as a data scientist?