



Marketing Strategy: Based on First Principles and Data Analytics

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Data Analytics Case 2



Acquiring New Customers in the Hospitality Industry¹

Conor Henderson, Shrihari Sridhar and Alejandro Lerza Durant

Background

Airbnb is an Internet firm that helps travelers discover and book unique accommodations offered by hosts with a room or house available for short term rental around the world.

Airbnb was founded in the summer of 2008 in San Francisco, CA, and quickly became a disrupter to the traditional hotel and lodging industry. The company bypassed the brick and mortar business model by creating a brokerage service between prospective guests and decentralized lodging locations. Airbnb's service can be accessed via company websites or mobile applications for Android, iOS, and Apple Watch. System users may search for accommodations by filtering data such as date, location, lodging type, and price. Prior to booking lodging, users must authenticate the process by providing their name, valid email address, photo id, telephone number, and payment information. Airbnb earns revenue by charging service fees to both guests and hosts.

The cost of Airbnb lodging and accommodations is determined by the host. By not directly owning physical locations, Airbnb has been able to quickly scale its business to accommodate demand. Currently, the company offers more than 3 million listings in over 65,000 cities and nearly 200 countries.

As of late 2016, Airbnb was valued at around \$30 billion, a similar amount to the Marriott hotel group, even though it does not own any of its properties.

Some local governments have decided Airbnb is illegal or highly subject to local restrictions. Imagine a city, which had previously made listing homes on Airbnb illegal due to concerns that it was raising home values and making ownership unaffordable, makes a decision to allow the firm to operate as long as it pays travel taxes. In order to grow the local marketplace, Airbnb hires you to come up with a plan and execute it.

Problem Statement

¹ Conor Henderson is an Assistant Professor of Marketing at the University of Oregon, Shrihari Sridhar is Center for Executive Development Professor at Texas A&M University, and Alejandro Lerza Durant is an M.S. Analytics Student at Texas A&M University.



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As documented in Chapter 3, customers change over time due to industry fluctuations. Failing to understand and address these dynamics can lead to poor business performance. Since variation in customers' preferences over time is an inherent condition facing all marketers, an effective marketing strategy must manage these dynamics (MP#2).

Airbnb's problem would appear to fit the second fundamental marketing problem all firms face while formulating marketing strategy, i.e. multiple factors were working together in multifaceted ways to make all customer change in the market. So Airbnb must constantly analyze which needs, desires, and preferences across their buyers are most important to attracting (onboarding) customers and retaining hosts. Thus, Airbnb needs answers to the following questions:

- Which product attributes are most desired by customers during acquisition and retention?
- How can the market be effectively segmented to decide:
 - Which customers to acquire?
 - Which customers to expand?
- How should Airbnb work its targeting and positioning strategy to deal with customer dynamics?

To help inform the decision, suppose Airbnb embarked on an analytics exercise in Eugene, OR, to power a choice-model-based analysis.

Data

Traveler Data

As a local Airbnb manager, you partner with Alaska Airlines to promote your firm. As a pilot test, Airbnb will pay Alaska Airlines \$9,000 for the ability to email a promotion to the next 3,000 passengers who book a flight from Seattle to Eugene.

You design three emails: 1) promotion of \$25 off an Airbnb booking, 2) promotion of free transportation from the airport to the Eugene destination booked on Airbnb (taxi cost is \$25, pre-arranged through Oregon Taxi), and 3) a simple welcome email from Airbnb with a 30 second video that shows some of Eugene's highlights (no additional cost). The email promotions are randomly distributed to the first 3,000 passengers who booked a flight to Eugene on Alaska Airlines and did not already have an Airbnb account based on an email-matching algorithm. Each promotion was mailed to 1,000 passengers.

After the email campaign, Alaska Airlines shares the following information about the collected data:

- Email promotion type: 1=\$25 off, 2=free taxi, 3=welcome. These are converted into "dummy variables" of 1/0 for \$25 off and 1/0 for taxi, and the welcome email is used as the default reference category.



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- Customer email: The variable is used to do the following:
 - Determine if the recipient uses any of the following email accounts:
 - @gmail.com;
 - @yahoo.com;
 - .edu;
 - or other. (These are also converted to dummy variables, with “other” as the default reference category.)
- Alaska account status: 1=not an Alaska frequent flier member, 2=frequent flier member, 3=MVP frequent flier member.
- Address: 1=out of state, 2=Oregon but not Eugene or Springfield, 3=Eugene or Springfield (converted to two dummy variables with “out of state” as the default reference category).
- Age.
- Outcome: Indicates whether the person responded to the email by booking a stay on Airbnb in Eugene: 1=yes, 0=no.
- Number of tickets booked on the itinerary.
- Type of ticket: 1=round trip departing Eugene in less than 14 days, 0=one way to Eugene.

Host Data

Separately, Airbnb has data on hosts—those who list their property on the Airbnb platform for travelers to rent. It is useful to know what predicts a host’s likelihood to remain on the platform over time. With a host’s retention rate and information on how much revenue they earn, you could prioritize which host to target based on their “lifetime value” (calculation can be estimated based on a customer lifetime value formula).

You have the following data about 400 hosts:

- Whether the accommodation is still listed on Airbnb: 1=yes, 0=no.
- How long they were on Airbnb in days.
- Listing type: 0=shared room or private room, 1=entire home.
- Number of guests the listing accommodates.
- Zillow estimate of property value in thousands of U.S. dollars.
- Average listing price on Airbnb per night.
- Average rating by Airbnb guests.
- Revenue generated in one year for Airbnb via its property fee.
- Location: 1=campus to downtown to Whitaker, 2=Fairmont to Amazon to South Eugene Hills, 3=Friendly to West Eugene, 4=North Eugene, 5=Springfield, 6=other outskirt locations. These are converted to dummy variables with “other outskirt locations” used as the default reference category.



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You use a choice model on the travelers' data (see "AirBnB Choice models Case Traveler Data") to determine what email works best in driving people to book on AirBnB. You also use a choice model on the Hosts data (see "AirBnB Choice models Case Hosts Data") to find out what predicts if a host remains on the platform and estimates retention rate for Eugene area hosts. With this information, you are better equipped to determine which hosts to target and how much to spend on acquiring new Airbnb hosts in Eugene.



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Questions

- 1) List each statistically significant predictor of a traveler's likelihood to book on AirBnB. Provide a brief explanation of what may cause a significant statistical relationship for each variable.
- 2) Follow the same process to predict retained hosts.
- 3) What would be your plan of attack to attract travelers to Eugene to book on Airbnb?
- 4) What would be your plan of attack to entice owners to list accommodations on Airbnb?