



**IMT Atlantique**

Bretagne-Pays de la Loire  
École Mines-Télécom

# A study on AirBnB Price Recommendation for hosts

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AirBnB has become the main choice of accommodation for many travelers. It manages a short term rental platform, where people can list their apartment or home and allow others to rent a room or even the entire property for a period of time.

**150M+**

number of total  
users on Airbnb

**2M+**

people staying in an  
Airbnb per night

**6M+**

global Airbnb  
listings worldwide

**\$35B**

valuation based off  
recent stock sale

<https://ipropertymanagement.com/airbnb-statistics>

## 2. Business Understanding

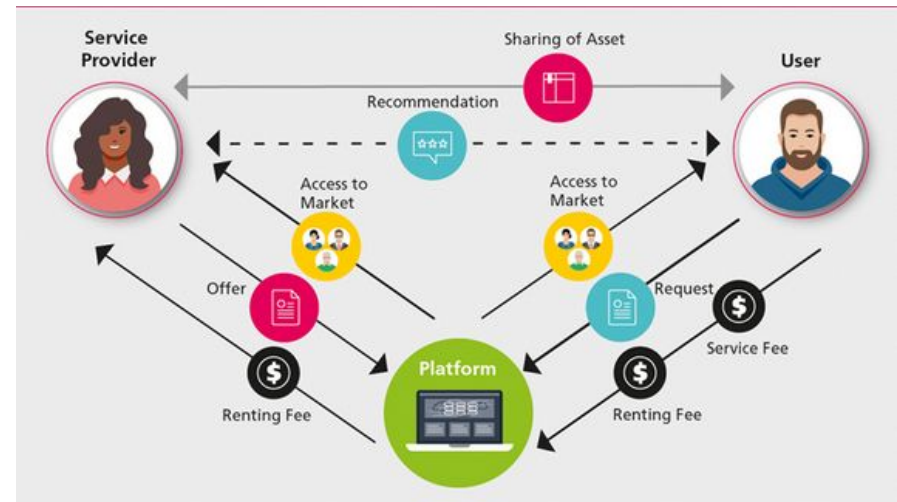
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### a. Objectives

- Why the listing price is important for the company?
  - Competitive business.
  - Satisfied hosts.
  - Insentivation of the market.
- How the data is a starting point to get a good answer?
  - Available historical data.
  - Statistical relations between price and usage of the properties.
- Is the predictive pricing tool provided by AirBnB accurate enough to provide good prices?

### Objectives:

- Increase revenue.
- Gain and keep users and hosts.
- Help hosts to set a reasonable price in order to increase utilization rate.



Business Model [Credit: Dyimage]

## 2. Business Understanding

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### b. Data Preparation

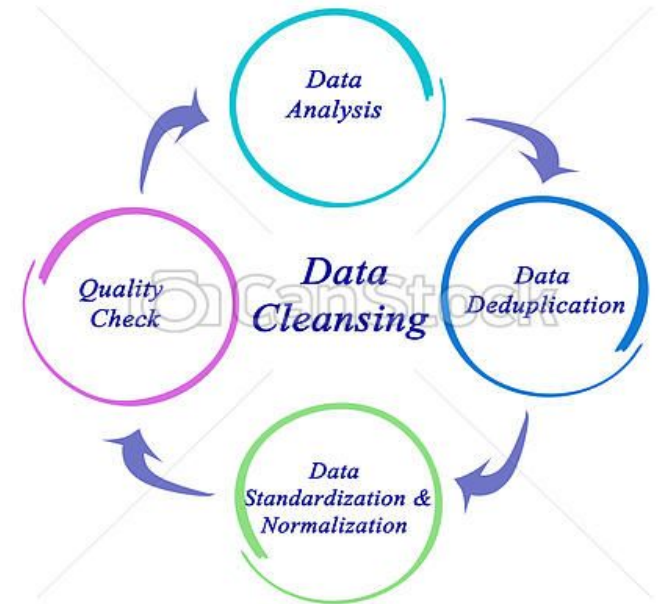


**Inside Airbnb**  
Adding data to the debate



**yelp**

- |                |                            |
|----------------|----------------------------|
| ➤ Accommodate  | ➤ Time of the year         |
| ➤ Bathrooms    | ➤ Cleaning fees            |
| ➤ Bedroom      | ➤ Last updated review      |
| ➤ Beds         | ➤ Number of days available |
| ➤ Bed Type     | ➤ Number of guests allowed |
| ➤ Amenities    | ➤ Neighbourhood            |
| ➤ Surface area | ➤ Is Restaurant / Bar      |
| ➤ Location     | ➤ Yelp reviews             |
|                | ➤ Airbnb Price             |



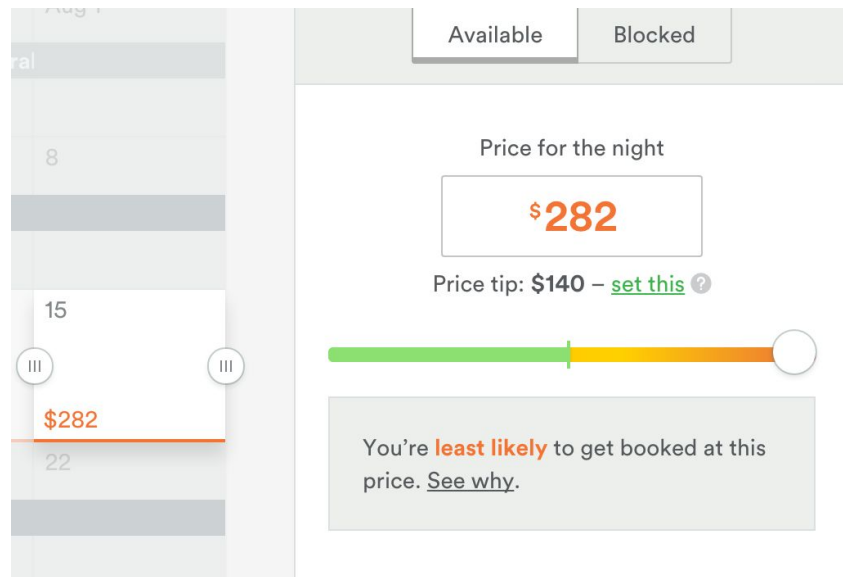
<https://st4.depositphotos.com>

## 2. Business Understanding

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### c. Strategy Validation

- AIRBNB uses Artificial Intelligence, Machine Learning and Big Data to predict the best price to hosts.
- According to FORBES, AIRBNB states that a property is four times more likely to be book if a host sets their price within 5% of the recommend price tip [2].
- This pricing strategy has earned the company \$450 million direct annual revenue from traditional hotels and a 13% increase in users [3].



The screenshot shows the Airbnb pricing suggestion interface. On the left, a calendar view displays dates with a highlighted date showing a price of \$282. On the right, the 'Price for the night' is set at \$282. Below this, the 'Price tip' is \$140, with a green link to 'set this'. A horizontal price range slider is shown, with a green segment on the left and a yellow segment on the right. A message at the bottom states: 'You're **least likely** to get booked at this price. [See why.](#)'

- Using PCA to extract the highly important features from the data set.
- Exploring neural network or SVM modelling could have shown improvement in such cases (capability to look for hidden features).
- Exploring better market pricing data set (Average price in neighborhood).
- Seasonal market trend dataset could help to find pricing trend in peak seasons.

# *Questions & Answers*



1. <https://ipropertymanagement.com/airbnb-statistics>
2. <https://www.forbes.com/sites/ellenhuet/2015/06/05/how-airbnb-uses-big-data-and-machine-learning-to-guide-hosts-to-the-perfect-price/#61e78e396d49>
3. <https://conceptainc.com/blog/price-optimization-how-dynamic-pricing-helps-airbnb-hosts-earn-big/>