

M9L8. Zillow Offers Case Study

Slide #1



The slide is a presentation cover for a case study on Zillow Offers. It is divided into two main sections. The left section has a dark background and contains the Texas A&M University Engineering logo at the top, followed by the title 'Zillow Offers Case Study' in white. Below the title is the name 'Dr. Xiaomin Yang'. At the bottom of this section, it says 'TCMT 612' in yellow, followed by 'Technical Management Decision Making' in white, and a red banner at the very bottom with the text 'MASTERS OF ENGINEERING TECHNICAL MANAGEMENT' in white. The right section features a grayscale image of a person from behind, looking at a large, curved digital display. The display shows a complex network of nodes and lines, along with several hexagonal icons containing bar charts, line graphs, and network diagrams.

TEXAS A&M UNIVERSITY
Engineering

Zillow Offers Case Study

Dr. Xiaomin Yang

TCMT 612 | Technical Management
Decision Making

MASTERS OF ENGINEERING TECHNICAL MANAGEMENT

Slide #2



iBuying Business Case

Data analytics has become a powerful catalyst of innovative solutions in industries, however translating data algorithms into realizable business opportunities is not without challenges.

Data analytics has become a powerful catalyst of innovative solutions in industries, governments, and education sectors as its applications appear endless and its impacts are game changing.

Zillow's failure of algorithm powered a 6 billion dollar instant house buying business in 2022.

However, it reminds both of Business executives and data science educators of the challenges of translating data algorithms into realizable business opportunities.

Slide #3



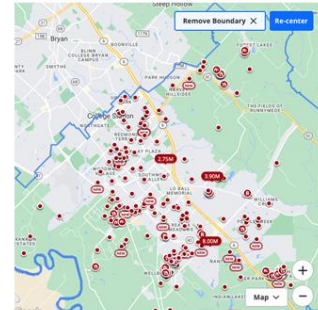
A technology-driven real estate advertising company

Zillow.com serves as a hub for real estate information and services

Possesses information on approximately 110 million homes in the US

Generate revenue primarily from advertisement.

\$1.96 billion revenue in 2022, 9% down from \$2.13 billion in 2021



Zillow Group is a technology driven real estate advertising company that operates primarily through its website, Zillow.com.

Headquartered in Seattle, Washington, the company's main source of revenue comes from selling advertising space on its platform.

Zillow.com serves as a hub for individuals seeking real estate information, offering a wide range of services and features to both buyers and sellers.

Zillow Group, a prominent real estate advertising company, has amassed impressive business statistics over the years.

With its headquarters in Seattle, Washington, the company has established itself as a leading player in the real estate technology sector.

One of the standout statistics is the vast amount of data that Zillow possesses.

The company boasts information on approximately 110 million homes across the United States, providing users with a comprehensive database for their real estate needs.

Zillow Group's revenue generation is primarily driven by selling advertising space on its website, Zillow.com.

This business model has proven highly successful with the company consistently reporting impressive financial figures.

Zillow reported a revenue of 1.96 billion dollars in 2022, 9% down from 2.13 billion dollars in 2021.

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Zestimate®: \$602,352



Provides estimated market values for residential properties using Zillow's database of approximately 110 million homes

The Zestimate algorithm considers various factors like

- Property details
- Location
- Tax assessments
- Recent sales histories

Not an official appraisal but serves as a starting point for estimating a home's value

The accuracy depends on data availability and quality

- Median error rate of 3.2% for on-market homes
- 7.52% for off-market homes

This extensive data coverage contributes to the accuracy and reliability of Zillow services, including its popular price estimation tool.

One of the key attractions of Zillow.com is its popular price estimation service known as Zillow estimate or Zestimate for short, the Zestimate provides users with an estimated market value for residential properties.

Zillow boasts an extensive database that encompasses data on approximately 110 million homes across the United States.

This wealth of information contributes to the comprehensiveness and usefulness of the Zestimate tool.

Combined with other real estate information provided on Zillow.com, such as property listings, neighborhood insights, and mortgage calculators, the Zestimate plays a significant role in attracting users to the platform.

It leverages a proprietary algorithm that takes into account various data sources, including publicly available information and user submitted data.

Factors such as property details, number of bedrooms, bathrooms, age of the home, location, property tax assessments, and recent sales histories of similar properties in the area are considered in the calculation.

It's important to note that Zillow explicitly states that this estimate is not an official appraisal, but rather a starting point for estimating a home's value.

The accuracy of the Zestimate is influenced by the availability and quality of data in a particular location.

According to Zillow, the median error rate for on market homes nationwide is 3.2%, meaning that half of the Zestimate prices for such homes are within 3.2% of the eventual sale price, while the other half are not.

For off market homes, the median error rate increases to 7.52%.

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Zillow has established itself as a prominent player in the real estate advertising industry by leveraging technology to provide valuable services and tool to home buyers and sellers.



Zillow Group has established itself as a prominent player in the real estate advertising industry by leveraging technology to provide valuable services and tools to home buyers and sellers.

The company continues to evolve and refine its offerings, aiming to empower individuals with the information they need to make informed decisions in the real estate market.

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- Zillow launched Zillow Offers in 2019, a service that made all-cash offers and purchased properties directly from home sellers
- Used its Zestimate algorithms to predict the fair market value of eligible homes
- Deployed over 100 pricing analysts to double-check the computer-generated numbers, reducing the risk of overpaying

In 2019, Zillow entered the digital home buying business by launching a new service, Zillow Offers, which made all cash offers and purchased properties directly from home sellers, the service appeared to be rational and simple.

Sellers only needed to answer some questions online, as well as take and upload a few pictures.

Zillow would use the Zestimate computer algorithms to predict the fair market value of an eligible home and offer the seller a near instant cash price that would include the cost of repairs and a small service fee.

No more than 2% of the offering price to encourage future sellers.

The company also deployed more than 100 pricing analysts to double check the computer generated numbers to reduce the risk of overpaying.

If the seller accepted the offer, Zillow would buy the home, make a minor renovation, and resell it quickly on the market.

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Business Model

- iBuying used data science to predict the price
- Zestimate, relevant statistics and photographic analysis were incorporated into Zillow Offers pricing
- Human analysts verified the computations

The algorithm driven house flipping business model, called iBuying, is based on the confidence that data science fed by megadata can predict the specific price of any eligible house with pinpoint accuracy.

Zillow held years of experience with its Zestimate algorithms and therefore should be technically confident to incorporate relevant statistics into the Zillow offers pricing model which also includes photographic analysis.

In addition, the company deployed many experienced human analysts to verify computation outcomes.

Zillow offers diligently took comprehensive data sciences best practices to maximize its chance of success.

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Performance

Zillow Offers experienced significant growth with home purchase volume increasing by 100% quarterly in 2021,

- Bought 3,800 homes in the second quarter
- 9,680 homes in the third quarter

According to a Wall Street Journal article, in 2021, Zillow Offers business grew 100 percent quarterly in terms of home purchase volume.

Zillow bought 3,800 homes in the second quarter, more than double the previous quarter.

In the third quarter, it bought 9,680 homes.

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Zillow Group permanent shutdown of its Zillow Offers business on November 2nd, 2021

1. The company incurred a loss of over \$500 million in 2021 due to the failure of Zillow Offers
2. Resulted in the divestment of 7,000 homes with a total value of \$2.8 billion

On November 2, 2021, Zillow suddenly announced that the Zillow Offers business would permanently shut down.

Zillow Group lost more than 500 million dollars in 2021 from its Zillow Offers business.

The company had to divest 7,000 homes with 2.8 billion dollar value on its balance sheet after Zillow Offers ceased operations, according to Bloomberg.

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Zillow attributed the failure to technical and market factors

- CEO Rich Barton acknowledged that the pricing algorithm failed to accurately predict fluctuations in home prices.
- “We’ve determined the unpredictability in forecasting home prices far exceeds what we anticipated, and continuing to scale Zillow Offers would result in too many earnings and balance sheet volatility.”

The company attributed its Zillow offers disaster to technical and market factors.

Zillow Group co-founder and CEO Rich Barton acknowledged that Zillow's pricing algorithm had failed to accurately predict fluctuations in home prices.

In the company's fiscal third quarter earnings release, Mr. Barton said, we've determined the unpredictability in forecasting home prices far exceeds what we anticipated and continuing to scale Zillow offers would result in too many earnings and balance sheet volatility.

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- Zillow Offers expected to sell the homes at a 5% to 7% loss
- Labor and supply shortages during the Covid-19 pandemic increased operational and financial costs
- Analysts were routinely overruled by the system

The company disclosed that Zillow Offers expected it would have to sell its homes at a 5% to 7% loss in the fall of 2021.

Zillow struggled to find workers and building materials to repair the purchased properties amid a labor and supply shortage during the COVID 19 pandemic.

The longer turnover period increased operation and financial costs, which had not been adequately addressed by the pricing algorithms.

Zillow pricing analysts complained that the company had retooled the algorithms to raise the analysts' suggested prices based on their manual analysis.

Analysts whose job was to confirm the prices of homes found that they were routinely overruled by the system.

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Industry Challenges (Opendoor)

- Opendoor lost \$1.35 billion in 2022
- It uses AI and other technology to price and resell homes
- Opendoor ended 2022 with an unsold inventory of 12,788 homes

Zillow Offers is not the only house flipping practitioner experiencing a big loss from betting its future on an algorithm-based business model.

Its iBuying competitor, Opendoor, lost 1.35 billion dollars in 2022.

Opendoor uses artificial intelligence and other technology to help it price and buy homes to quickly resell them at a profit margin.

The company ended 2022 with an unsold inventory of 12,788 homes.

It was expected to lose about 4% of a home on average for the properties sold in the fourth quarter of 2022.