Zillow got burned badly

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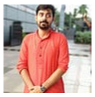
The case of Zillow got much publicity lately so much so that Prophet, neural network etc. started trending. So what actually happened?



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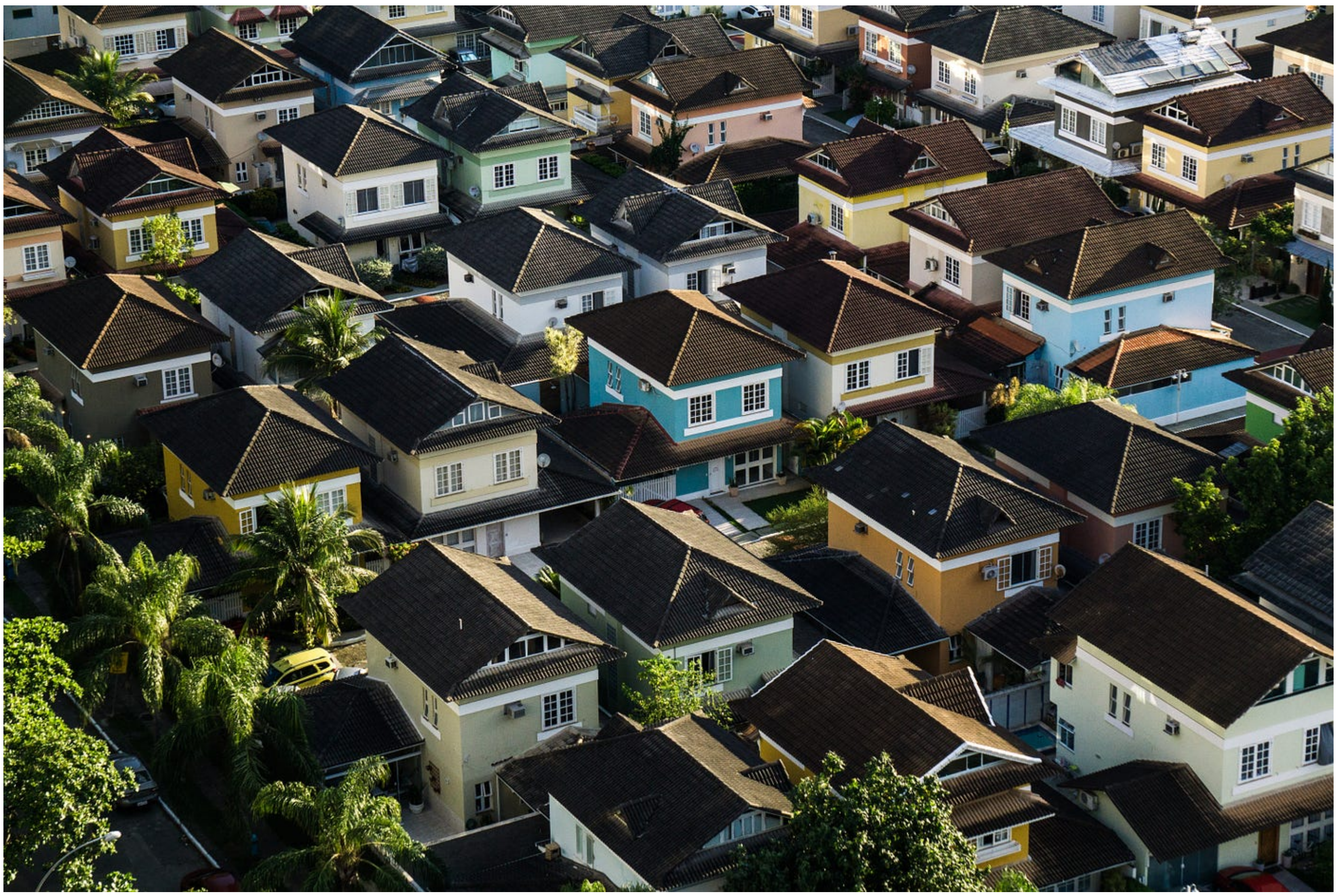


Photo by on

2nd November was the day which marked an abrupt end to a chaotic few weeks for America's most famous real estate company: Zillow, it was shutting down its AI-powered home resell business.

Zillow was the brainchild of Richard Barton, the 54 year old American internet entrepreneur who also founded the online travel company Expedia and job search engine and career community Glassdoor. He had bet the company's future on **instant-buying** (or **iBuying**),**which allowed homeowners to sell their property online for cash, rather than going through an extended bidding, sales and closing process.**

> Even as recently as August, Barton boasted popularity of the service, telling investors that the old way of selling a home was so “dreadful and dreaded” that customers were willing to bypass potential bidding wars to sell to Zillow “in this sizzling-hot sellers market.” — Bloomberg

First it started with **Zestimate**, which debuted in 2006, it was a proprietary algorithm based on a neural network model which used house facts, location, housing market trends, property values, data from county, tax assessor records, as well as direct feeds from hundreds of multiple listing services and brokerages to determine the price of a house. It was very successful in driving conversation around property, so much so that browsing property valuations became a hobby for many. With shows like **Saturday Night Live** encouraging the habit, it became trendy to find the value of your neighboring houses to identify how posh of an area you live in.

> “I think one of the reasons the Zestimate has been so wildly successful for Zillow is that it did tap into a curiosity that homeowners have always had about what their house is really worth, since for most people a home is the biggest financial investment they’re ever going to make, it doesn’t hurt to have tools that can give you at least an approximation of what that asset is worth in today’s market.” — Rick Sharga, a longtime industry veteran now at Carrington Mortgage Holdings

This begs the question, **how accurate is Zestimate?** *By Zestimate has a median error rate of 1.9% for homes that are on-market and 6.9% for homes that are off-market. But this accuracy varies widely across cities and their corresponding housing markets. In Cincinnati, for instance, approximately 35% of Zestimates for off-market homes were within 5% of the eventual sales prices, and 82% were within 20% of the price. Comparatively, in Denver, 51% of Zestimates were within 5% of the sales price, and 94% were within 20% of the sales figure.*

In 2017, a class-action lawsuit was filed, accusing that the Zillow misled property purchasers by displaying values that were lower than what sellers wanted for their homes. The lawsuit was rejected by the judge, who noted that the tool’s name *“indicates that Zestimates are essentially an estimate of a property’s market value.”*

Zillow, had recognized the need to improve the accuracy of its valuation model. In 2017, the company launched a contest with a $1M prize money, Zestimate was on an average around $10K off of the actual sales price of a median-priced home, and that the information provided by the winning team would reduce that margin by around $1.3K, the prize went to a group of data scientists and engineers from three different countries: Chahhou Mohamed of Morocco, Jordan Meyer of the United States and Nima Shahbazi of Canada.

In February Zillow announced that the Zestimate would represent “an initial cash offer” for eligible homes spread across 20 cities, from Nashville, Houston, Phoenix, Miami to Denver and Los Angeles.

> “Presenting the Zestimate as a cash offer to qualifying homes up front will save time, reduce friction and provide greater transparency — getting us closer to our vision of helping customers transact with the click of a button,” Zillow COO Jeremy Wacksman said in the announcement. — Marketwatch

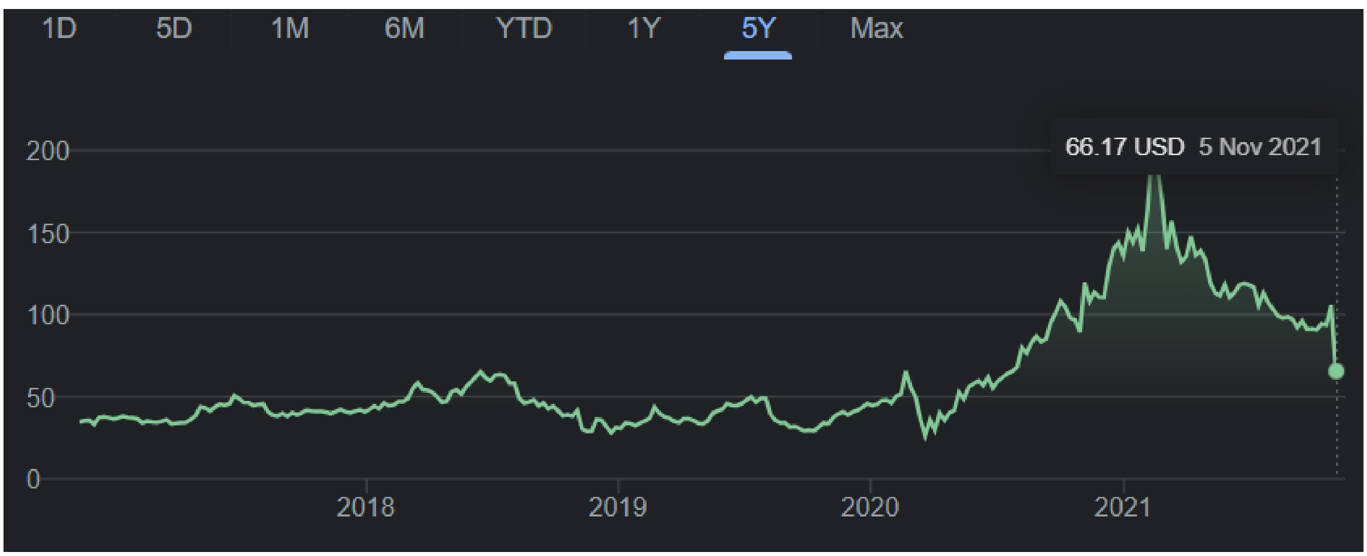
This was the first step of integrating Zestimate with iBuying.

The problem started due to the pandemic, since summer of 2020 the housing market in USA was hot and quite some unforeseen trends had cropped up, this reduced Zillow's power to properly price the homes that it was buying or better to say iBuying. Since Zillow relied on Zestimates which in turn derived its information based on data and trends, it missed out on both.

For example, post pandemic there was a sudden increase in demand for bigger houses in the suburbs, which based on historical data was difficult to generate an estimate of. There were data issues too, Zillow missed out on having real time brokering data in new markets, post sales data also takes time to be updated hence there was always a lag as to what prices the recent houses have sold at.

Other issues have also been pointed at, Zillow said it did not find enough workers to revamp and repair the houses it had bought in order to put them in the market. Zillow had tweaked its algorithms to price houses aggressively and at the end it had a purchased houses at a higher price than it could sell in a market that was cooling down.

By October 17th, there were signs of trouble: Zillow had paused new house offers for the year as it sorted through a backlog of properties under contract. On November 1st, Zillow marketed nearly 7,000 houses for a total of $2.8 Billion. The operation was shut down a day later by its board of directors.



Zillow Share price over the last 5 years

For all the good that data science and machine learning has done over the years, incidents like this bring a reality check. The truth remains that it is not possible and neither prudent to do complicated business based on algorithmic output alone. The real world still remains too complex to be modeled. Zillow's strength lay in the fact that it could scale to thousands of properties by removing the human factor, but then again that became its downfall. *So what went wrong? Nothing that we already don't know of, extrapolating existing data in new pandemic era market, unforeseen market dynamics, over reliance on algorithmic outputs while not considering ground realities.*

Thanks for reading, stay safe and happy. See you in the next article.

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