

Enterprise Performance Management Plan: Zillow Group, Inc

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Executive Summary

Purpose

The modern business landscape is fraught with both perils and opportunity. The real estate market has outperformed many experts' estimates. Several fantastic real estate web and mobile applications have entered the landscape, with Zillow leading the way. While Zillow is the premier leader in the space, the company has had some major setbacks and is in much need of re-direction to improve the company's performance and return to profitability. The purpose of this paper is to present a solution to manage and improve Zillow's performance. This paper will offer a Performance Management (PM) Plan based on the Balanced Scorecard. Once the PM is outlined and explained, the team will request authorization to proceed with implementation of the plan.

Overview of Zillow's Landscape

Zillow's Background

Zillow Group (Z), Inc is a web application that serves as a marketplace that links home sellers, buyers, renters, mortgage originators, landlords, property managers, and real estate agents. Zillow's applications allow users to share information about homes for sale, rent, and even homes in foreclosure. Zillow Group was founded in February 2006 by Rich Barton and Lloyd Frink.

Zillow's mission is: "We're on a mission to give people the power to unlock life's next chapter", (Zillow, 2021). This mission is at the heart of Zillow's service offerings, which act as a funnel to provide customers with an end-to-end homebuying experience. Zillow's vision is: "Empowering consumers with data, inspiration, and knowledge around the place they call home and connecting them with the best local professionals who can help" (Zillow, 2019). Zillow's values are:

- | | |
|----------------------------------|------------------------------|
| (1) Customers Are Our North Star | (6) Include and Empower |
| (2) Turn on the Lights | (7) Thing Big, Move Fast |
| (3) Do the Right Thing | (8) Deliver Quality on Time, |
| (4) Own It | Every Time |
| (5) Better Together | |

Zillow Group operates a series of brands that support the homebuyer, enabling an end-to-end homebuying experience. Zillow is the flagship brand that hosts Zillow Group's webpage, this is the page homebuyers visit to search real estate listings. Zillow Offers is the brand that leverages AI-driven Zestimate to purchase, renovate, and re-sell homes for a profit. Zillow HomeLoans was the result of the 2018 acquisition of Mortgage Lenders of America, which licensed Zillow Group as a mortgage originator. Zillow Closing Services provide real estate title and closing assistance. Zillow

Premier Agent is a service used by real estate agents to list properties for sale on Zillow application. Zillow acquired ShowingTime mobile application in Q3 2021. ShowingTime allows real estate agents to coordinate and automate home showing requests. Zillow previously acquired Trulia, a competitor real estate app in 2015, that has continued operating under the Trulia name.

Zillow Group operates in a competitive landscape that changes rapidly and is susceptible to economic measures such as Federal funds rate, unemployment, and as of 2020, COVID-19 pandemic. Additionally, Zillow Group is impacted by both the current and future state of the economy, which directly effects the residential housing market. Next, The company risks loss of revenue due to changes in laws or regulations as well. Furthermore, Zillow Offers risk factors include the company's ability to secure financing, obtain licenses and permits, market timing, cost of materials, and labor shortages.

Zillow's business model generates revenue via three segments: Homes; Internet, Media, and Technology (IMT); and Mortgages. The homes segment is comprised of Zillow Offers and Zillow Closing services. Zillow Offers is a venture that started in 2018 and is predicated on their proprietary AI algorithm Zestimate, which uses a neural network to estimate the current market price of a particular home. The algorithm provides market value estimates for approximately 1.5M homes; both on the market and off the market. Zestimate uses explanatory variables including square footage, location, and total bathrooms. The algorithm further differentiates homes by on market and off market applying different explanatory variables. The AI then conducts a regression analysis to produce the response variable, or estimated market value. Once trained, Zestimate can produce response variables unsupervised, even accounting for season fluctuations in demand. Zestimate's nationwide median margin of error is 1.9% for homes on the market, 6.9% for homes off market. Nationwide, 82.2% of Zestimates are within 5%, 95.1% are within 10%, and 98.8% of Zestimates are within 20% of sales price (Zillow, 2021).

Zillow's IMT segment generates revenue via Premier Agent, which includes listings for existing homes, new construction, and rentals. Additionally, the IMT segment's revenue includes marketing and business products, and ad sales to property management companies. Next, the IMT segment provides leads, preferred services for real estate agents, and ad sales to mortgage lenders.

The mortgages segment operates as a licensed mortgage originator. Zillow often generates revenue through selling mortgages to 3rd-party entities. The mortgages are held for sale at the fair market value which is calculated by comparing current mortgage prices on the secondary market (Zillow 21Q3 10K). Next, the mortgage segment reports revenue from forward contracts on the sale of mortgage backed securities.

Overall Current Performance

Zillow Group announced in 21Q3 Letter to Shareholders that the company would be discontinuing Zillow Offers operations, which also included a 25% reduction in the workforce. Zillow Offers will be discontinued for several complex reasons. Zillow maintains the vision of helping homebuyers reach the next chapter in their lives and seeks to modernize the home buying experience. When Zillow embarked on the Zillow Offers endeavor, the goal was to be a market maker in the real estate industry, which would minimize risk. At the heart of Zillow Offers was Zestimate's ability to forecast the price of homes. Since Zillow Offers inception three and a half years ago, the company, and the economy, have experienced impactful events and setbacks. First and foremost, the global pandemic simply wreaked havoc on Zillow's ability to forecast home pricing. One of the issues that Zestimate was not able to forecast is the steep decline in home inventories prior to the pandemic, as seen below.



The chart above depicts a material decline in supply, creating a sellers' market, fueling instability in Zestimate's ability to forecast prices. Additionally, Zillow Offers ability to profitably operate hinged on its ability to reach economies of scale. Zillow determined that market volatility would prevent the Zillow Offers from reaching scale without a significant equity investment and risk.

The final factor in determining to discontinue Zillow Offers was the company's inability to convert prospective sellers offer. Zillow states that the company was only able to convert 10% of sellers and left the other 90% dissatisfied. Zillow concluded that they're still the number one real

estate app in the nation and believe that they can still leverage their position in areas that entail less risk, while still delighting customers and growing the business.

Zillow's 21Q3 results were a mixed bag between the three operating segments, with Zillow Offers seeing \$1.2B top line as opposed to their \$1.45B estimated revenue and took a \$422M write-down. Zillow's IMT segment grew revenue to \$480M and reporting EBIT of \$130M. The Premier Agent segment experienced revenue growth of 20% year over year, improving top line performance to \$359, as the company was able to improve leads and connections between real estate agents and serious customers. Finally, the mortgage segment grew revenue 30% year over year to \$70M, propelled by increased sales of originated mortgages, refinances, and growth in platform usage. Overall, Zillow reported GAAP net loss of \$328M in 21Q3.

The core of Zillow's business moving forward will continue to focus on the IMT space, which leads the industry with 227M average unique users per month. Unique users are down 4% year over year, however, all things equal, is up 16% compared to same period 2019. Zillow cited pandemic impacts on its ability to compare year-over-year unique users.

Zillow's Strategies

Zillow's strategies are derived from four modes of operation: Value, Financial/Revenue, Technological, and Distribution. Under the value model, Zillow seeks to create value for sellers and property-owner by reducing the complexity of listing, renting, or selling a home on the platform. Additionally, Zillow seeks to delight buyers and renters by making it easy to use the application and search the database of over 110M listings. Technological strategies revolve around leverage technology to enable quick home searches on its easy-to-use platform. Additionally, Zillow utilizes natural language processing algorithms to create recommendations for each user. Next, Zillow uses software applications that process interior pictures of the home to develop a floorplan, allowing buyers a more granular look at the prospective home. In 2018, Zillow introduced software that allow users to take pictures of the home and create a 3D model of the home. This allows the user a virtual tour of the home without needing to visit the property.

The company's financial strategy revolves around the revenue generating segments: Homes, IMT, and Mortgages. The Homes segment is a service now referred to as iBuyers, which stands for Instant Buyers. iBuyers use market data to drive cash offers for homes, the value-add for the seller is that they don't have to deal with the hassle and complexity of selling on the open market. Zillow charges a 6% sales fee to address the cost of purchasing the home, closing costs in the 1-2% range, and a service charge of approximately 2.5% to cover maintenance and/or repairs. Zillow then completes upgrades on the home, then "flips" the home for a profit on the open market. The homes

strategy hinges on Zillow's ability to sell enough homes to reduce fixed costs and reach economies of scale. As of this writing, Zillow has approximately 7,000 homes in inventory/under contract and will spend the next several quarters renovating and selling the remaining inventories. With Zillow discontinuing Zillow Offers, the Homes strategy will need to be overhauled.

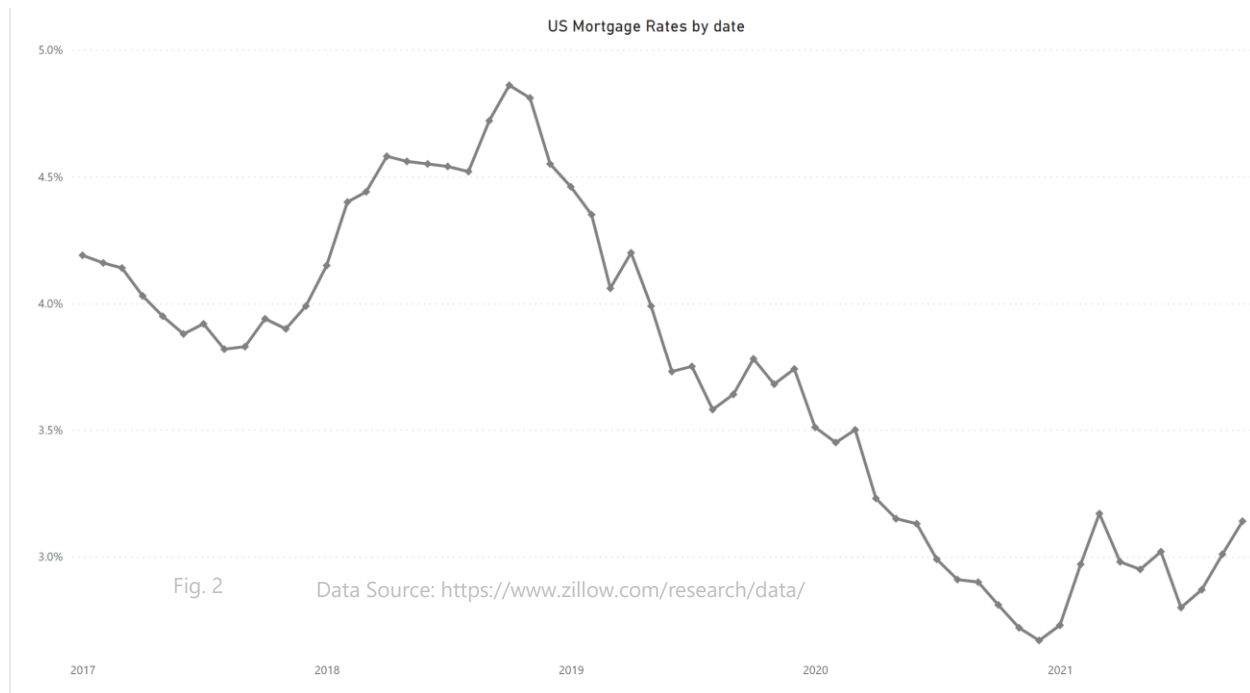
The IMT strategy has three focal points: Premier Agent, Rentals, and other services. Premier Agent is comprised of two Software as a Service (SAAS) platforms: Premier Agent and Premier Broker. These SAAS products allow agents and brokers to engage with leads and advertise their brokerage's services on the platform. Zillow's strategy is to earn revenue based on cost-per-lead, which is derived from the service offering and the price of the property listed. Zillow's rental strategy focuses on selling ad services to rental companies. Here, Zillow will perform selling motions to increase ad sales. Finally, Zillow provides other services to individuals involved in renovations and re-sell operations such as photographers and construction contractors.

Zillow's mortgage strategy involves originating mortgages, selling, and referring customers to over 50 partner lenders. Here, Zillow must focus strategies on vetting and closing mortgages, then on negotiating the sale of mortgages on the secondary market. Additionally, Zillow must work with lenders to generate revenue from referral services.

Zillow's distribution strategy consists of driving organic traffic to the site and developing paid advertising solutions. This strategy is furthered by creating lasting relationships and agreements with real estate professional on the site. For this strategy to be affective, the company must focus on relationship management, customer service, and creating value for agents.

Market and Competitor Analysis

The US housing market is as hot as it's ever been, brought on by historically low interest rates, low inventory, and a pandemic buying frenzy. The figure below depicts US mortgage rates from January 1, 2017, to September 30, 2021. If you recall fig. 1, home inventories peaked at ~1.8M in parallel to mortgage rates in fig. 2.



Logically, a decrease in home inventory (supply), coupled with an increase in demand brought on by the global pandemic and low interest rates, leads to an increase in home sale prices.

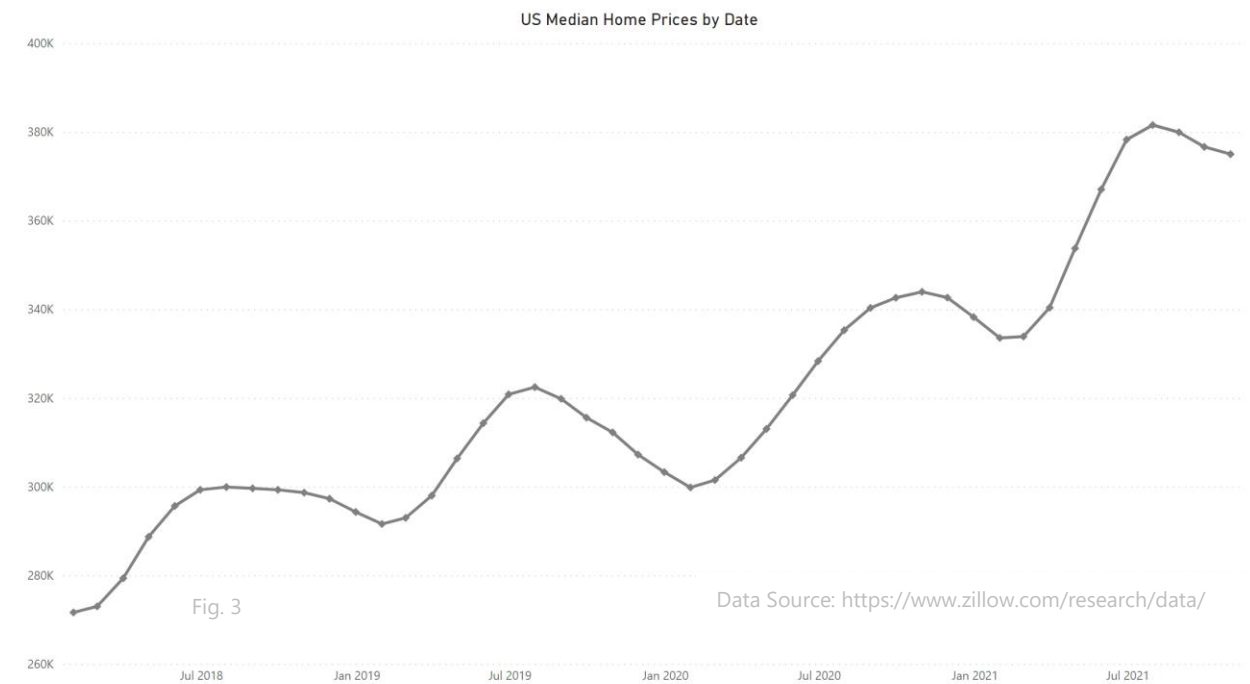


Figure 3 is a depiction of the trend in median home sale prices, showing a steady increase nearly in correlation to interest rates and inventories. US home sales prices, while not the hottest market in the past, have increased nationwide on average by 17% according to Forbes. Additionally, Zillow

estimates the US housing market to slow down, but still estimates ~13% growth in 2022. What does this mean for Zillow? This market forecast is opportunity. Zillow can wind down Zillow Offers and minimize losses, as well as renewing its focus on the IMT segment, and grow the Mortgage segment as the leader in the real estate app space. While Zillow is currently positioned #1 in the space and is the largest real estate app in the country, there are legitimate competitors.

Zillow has four top competitors in the real estate buying app space: Redfin, Homesnap, NeighborhoodScout, and Realtor.com. Redfin is a large real estate application that seeks to redefine the home buying experience and bills itself a viable alternative to the Zillow-Trulia duo. Redfin creates value through data updates set at 5-minute intervals, and a user interface (UI) like Zillow's. Redfin's UI accepts search criteria from the user, then returns useful data such as home price, valuation increase/decrease, square footage, etc. Redfin's value proposition is that the primary business is real estate brokerage services. Seller's agents can list on Redfin, or the seller can use Redfin's real estate brokerage services. Redfin employs real estate agents who receive ratings based on services provided, which in turn is used to determine compensation. Another feature home sellers can opt for is to hide their home's address for both privacy and security. Finally, Redfin's focus on speed to market enables the platform to post new listings within 15 minutes of the property's entry in the Multiple Listing Services.

The next competitor on Zillow's list is a company called Homesnap who, like Zillow, is a web-based real estate platform. Homesnap differentiates itself by offering an interactive map that allows the user to quickly change map filters such as commute time, map overlays, and the ability to draw the area search criteria. Homesnap's user experience is visually like Zillow's, however Homesnap allows the user to easily hide the search list to view the search map. Homesnap's value added to home buyers is the mobile app. Using the mobile app, home buyers can physically see a home for sale, snap a picture of the home with the app, and the app will then provide all listing information for that property. Additionally, Homesnap's app can provide the same query results for homes not listed on the market.

The next Zillow competitor does not compete in the listing space, but in the neighborhood information space, and goes by the name NeighborhoodScout. This competitor deals in information about respective neighborhoods. Users enter an address or zip code, then the query returns information such as school ratings, home value trends, and crime rates. NeighborhoodScout offers both free and subscription-based services from \$39.99 per month. NeighborhoodScout value added lies within the paid subscription service, which provides greater neighborhood information than Zillow, Redfin, and Realtor.com.

The fourth and final top Zillow competitor, Realtor.com, whose UI/UX is less robust than the other online real estate platforms. Realtor.com is a subsidiary of News Corp and has licensed the name Realtor from the National Association of Realtors. While this may seem unexciting, the relationship with the National Association of Realtors allows Realtor.com to be the one and only platform with live connection to the MLS. Live connection with the MLS allows Realtor.com to boast the most up-to-date listings in the industry. An additional Realtor.com competitive advantage is a texting feature that allows a buyer to directly text the listing agent. Buyers in a competitive market can use Realtor.com's real-time listing and the texting feature to stay in front of buyers using other real estate platforms, by setting alerts for new listings, then immediately contact listing agents.

KPI Process and the Balanced Scorecard

Enterprise Performance Management Intended Results

This Enterprise Performance Management Plan (EPM) is designed to link Zillow's mission and vision, to the business strategy, the strategy will then link to Zillow's Balanced Scorecard and Key Performance Indicators, which will be collected, monitored and report by Zillow's automated PM software.



Proposed Key Measures

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|-------------------------------|----------------------------|
| i) User Retention Rate | iii) Employee Satisfaction |
| ii) Number of Active Listings | iv) Customer Satisfaction |

v) Registrations	xi) Volume of Loans through Zillow
vi) Daily Active Users	Loans
vii) Revenue Per User	xii) Revenue
viii) Visits	xiii) Employee Certification &
ix) Unique Visits	Trainings
x) Retention Rate	xiv) Non-Operating Expenses
	xv) Net Income

Defined and Documented Selected Performance Measures

Zillow Group's 21Q3 SEC 10Q filing states that there are four key metrics reported by the executive team: visits, unique users, number of homes sold by Zillow Offers, and loans originated by Zillow Mortgages. A visit is defined as user interactions with any of Zillow's mobile or web applications. Additionally, a user visit is an established session and therefore can span for any period so long as the unique session continues. Count of visits is a significant metric because this allows the company to report user engagement levels on Zillow's mobile app and websites. Zillow maintains that high engagement level increases the likelihood of converting an interested user. Any scorecard metric used by Zillow should include a count of visits. Zillow reported 2.7B visits in 21Q3.

Zillow uses several methodologies for counting unique visitors. Unique visitors are an important metric because Zillow's revenue is predicated on its ability to link between users, whether renters, landowners, sellers, buyers, agents, or brokers with services that generate revenue. Therefore, Zillow can use unique visitors as a basis for predicting revenue, as unique visits and revenue have a strong, positive correlation. A unique visit occurs when a user first accesses the mobile app or website during a given calendar month, where each calendar month is a reset of unique visits. Additionally, unique visits are derived from the user's internet protocol (IP) address. Each time a user accesses a Zillow application from a new IP address, a unique visit is registered.

The next metric reported by company executives is number of homes sold. This figure is one of the vital signs that tells investors how well Zillow Offers is performing. Homes sold is an indicator of how well users are adopting Zillow Offers platform and is an indicator of revenue generated via Zillow Offers. Finally, the last metric reported by Zillow executives is loan origination volume. Loan originator volume is the key indicator regarding the health of Zillow Home Loans.

The metrics in the previous paragraphs are strategic level and are reported by C-suite executives as key measures in the SEC filings. There are several tactical and operational level metrics that will be reported in this EPM. Average mortgage loan value will be incorporated into this

EPM, as the metric indicates the value of the loan and expected revenue from interest. Next, there's revenue per lead, which is defined as total revenue through leads divided by total leads generated. An important, but not often spoken of metric is customer satisfaction score, which provides insight into customers' feelings about the platform and services provided. The next customer KPI in this EPM is the net promoter score, which measures the likelihood a given customer would recommend the service to another person.

The next metrics deal with processes. The first metric is server up-time. Server up-time should be a metric at any technology company, as this metric measures the percent of time the servers are up and available. A technology company such as Zillow must have maximum availability of servers since users can't visit the site if the server is not available. Next, there's average cycle time, which is a sum of the total days for a mortgage application from start to approval divided by the count of mortgage loans approved in that same period. Average cycle time is important because it indicates your mortgage processing efficiency. The last metric in this area is employee satisfaction. This metric may seem mundane, but employee satisfaction, or lack thereof, could negatively impact productivity and lead to higher employee turnover. Additionally, employee satisfaction metrics could light up areas of improvement that may not have been known to the leadership team.

Finally, the last metrics this study will recommend are Onboarding – Time to Full Productivity, New Manager Effectiveness, and Rate of Internal Job Promotions. Onboarding – Time to Full Productivity is a metric that measures the amount of time from a new hire start date and completion of training. This metric indicates how well your Human Resources and Training programs are performing. Next, New Manager Effectiveness measures the effectiveness of management training programs, as proper manager training leads to increased productivity and effectiveness.

Targets and Thresholds

Visits

Zillow had 2.662B visits in the three months ended September 30, 2021, and 2.786B same period previous year. The company experienced a 4% reduction in visits year over year. Visits is an important metric because it provides insights into how the application is performing, and thus allows course corrections. The target visits metric for the EPM will be set to 2.724B visits per quarter. This threshold was determined by taking the average of visits 21Q3 and 20Q3.

Unique Users

The average monthly unique users target for this EPM will be set to 231.4M per month. Zillow posted average monthly unique users for 21Q3 of 226.6M and 236.2M in 20Q3, a 4% decline year over year. A further analysis of the 4% decline in average monthly users attributed the decline to

the hot real estate market in 2020 artificially increased traffic to the application. Zillow seeks to increase average monthly unique users but does not forecast traffic volume similar to 20Q3. Average monthly unique users target was calculated by determined by averaging 21Q3 and 20Q3 average monthly users.

Number of Home Sold By Zillow Offers

Zillow Offers had, at the end of 21Q3, 9,790 homes in inventory waiting to be sold. Additionally, the company had 8,172 homes under contract and committed to honoring those contracts. Zillow Offers is now tasked with completing the renovation and sale of all properties in inventory. The goal with this metric and endeavor is to minimize losses and limit negative impacts on the real estate market. Zillow offers sold 3,082 homes in 21Q3 and expects to increase that amount in the coming quarters. The homes sold target for this EPM will be set at 4,500 homes. This target will allow Zillow the quickest path to divesting Zillow Offers, mitigate losses, and prevent impacts from “dumping” inventory on the market.

Loan Origination Volume

Loan origination volume consists of purchase loans and refinance loans. This metric allows the company to gauge Zillow Mortgage’s end to end performance. Zillow is seeking grow the loan origination business moving forward. Zillow loan origination volume was \$517M in 20Q3 and \$1.1B in 21Q3. Loan origination volume will be set to \$1.375B per quarter for this EPM. Zillow expects the business to grow, however is forecasting home value growth to slow to 13.6% in 2022. A decrease in home value growth could improve conditions for buyers, creating new opportunities for Zillow Mortgages.

Revenue Per Lead

The revenue per lead metric derived from cost charged per lead. Cost per lead depends on the average sale price in the selling home’s zip code. Additionally, cost per lead depends on the demand for Premier Agent services in each market. Markets with high concentration of agents using Premier Agent services will drive costs per lead. Zillow cost per lead ranges from \$20-\$60 per 1,000 impressions and estimates that agents will purchase 5,000 impressions per month to generate two leads. The cost range for 5,000 impressions is \$100-\$300 divided by two leads reduces the cost to the agent to \$50-\$150 per lead. The range is a nationwide variable, uniformly distributed. For this metric, the EPM will take the mean of the uniform distribution and set the target to \$75 per lead.

Customer Satisfaction Score

Customer satisfaction (CSAT) is a simple concept, but an imperative that allows the company to gauge customer sentiment and adjust. Zillow’s ability to improve the customer experience is

linked to the customer satisfaction score. The CSAT is a survey that is created on a scale of 1-star (very bad) to 5-star (excellent). The questions should be customized and tailored to Zillow's service lineup. The CSAT score is then averaged based on the responses received. If, for example 1000 responses are received, 750 are satisfied, the CSAT would be 75% satisfied. The American Customer Satisfaction Index benchmark for telecommunications and information sector is 72.0 for 2021. As the leader in the real estate web application space, Zillow seeks to provide an excellent customer experience and will thus set the CSAT to 75%.

Net Promoter Score

The Net Promoter Score (NPS) is a gauge used to determine customer satisfaction, brand loyalty, and the probability the customer will recommend the service to other people. This metric is customer-centric and aids in gauging expected growth. NPS data is gathered via surveys that can be emailed, on the web application, or SMS. The survey should be sent to customers that have received services from Zillow's lineup, i.e., Zillow Offers, Premier Agent, IMT ad sales, or Zillow Mortgages, etc. The NPS survey asks for ratings on a scale of 0-10, where 0 is "Very Unlikely" and 10 is "Very Likely". Scores are broken down into three segments: 0-6 are detractors, customers that are dissatisfied with the service provided. Detractors could churn or use word of mouth to influence others. Passives are those scoring 7-8, these customers are happy with the service, but they don't love the service. Promoters are customers scoring 9-10, those that love Zillow and are likely to recommend to others. Zillow can utilize NPS software that allows the business to automate the process of creating, scoring, and reporting NPS scores. According to Retently, the currently nationwide NPS for Internet and Software services is 39. Zillow seeks to exceed the benchmark and set the NPS target to 42.

Employee Satisfaction

Employee satisfaction is an important metric used to measure employee engagement levels. An engaged employee is more likely to perform well, therefore this measure must be reported. Zillow can simplify the process of gathering employee satisfaction level with employee engagement software such as Peakon. Peakon software will allow Zillow to maintain an respondent database, create mobile surveys, analyze the data, and report the data in a dashboard. Zillow values and encourages feedback from employee's and will set the employee satisfaction target to 8.5 out of 10.

Equity & Belonging

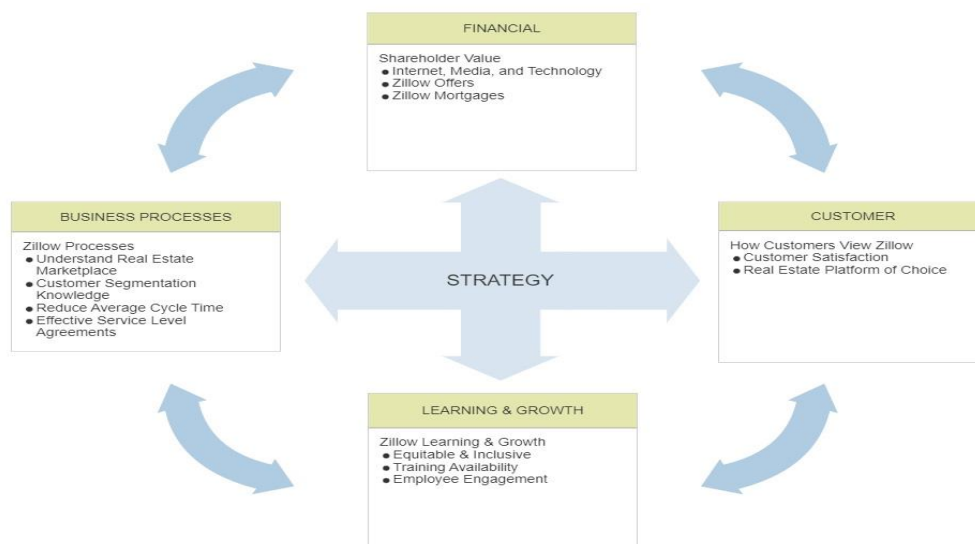
Equity & Belonging (E&B) is an important metric in today's business landscape where customers range from all ages and walks of life. Today's global marketplace demands companies address diversity and inclusion. Zillow reports E&B along three lines: Gender, Ethnicity, and Pay.

Zillow has implemented a recruiting program that seeks to equitably attract talent. As of December 31, 2020, 42.7% of Zillow's employees were women, up from 41.4% in 2018. Zillow was 61.7% Caucasian as of 2020, down from 65.9% in 2018, and will diversify and reduce that number to 57%.

Mock-up Balanced Scorecard

Overview – Proposed Scorecard

The Balanced Scorecard is often spoken about, it combines the strategies four perspectives (categories) Financial, Customer, Internal Processes, and Learning and Growth. The four perspectives are derived from the overall strategy and must link together. Financial perspectives address strategy in the context of the shareholder, how well the company creates wealth for the shareholder. Zillow creates wealth for the shareholder via their Internet, Media, and Technology segment; Zillow Offers home sales; and Zillow Mortgages. Zillow customers are real estate agents/brokers, property managers, landowners, home sellers, home buyers, and ad services. Zillow's strategy is to provide a wonderful customer experience for all users. Zillow's internal processes must enable the company to know and understand the real estate marketplace, this includes knowing home inventory levels and mortgage rates. The company also must ensure effective service level agreements with Amazon Web Services for server availability. Zillow must create a wonderful experience for mortgage customers by always improving the end-to-end mortgage process. Finally, Zillow recognizes that high performing teams are a key element in today's business landscape. The company must ensure employees remain engaged, diverse, and have ample opportunities for growth.



Automation Tool

Perhaps one of the most important aspects of managing performance is the ability to automate the process. Automation is important for several reasons, the first is reducing the likelihood

of errors. Manual processes invariably introduce errors, mostly human error. An oft used mechanism for reporting is Microsoft Excel as a data source. Excel is not a database and should not be used as the backend for any formal reporting system. The performance management system should be automated via the use of performance management software. Spider Strategies is a software company that is a leader in strategy software and has developed a solution that has the balanced scorecard as the foundation of the application. Spider's software suite streamlines strategy execution, strategic initiatives, meeting management, business intelligence, and data governance & security. Strategy execution is used to create the strategy map, and thus communicate strategies to the workforce. This enables employees to see the big picture and know where they fit into the overall strategy. Strategic initiatives application allows the firm to manage initiatives, projects, and/or programs.

Data Collection and Monitoring

Data collection and monitoring will occur via a combination of Software as a Service solutions. The data solutions will be comprised of SAP Customer Relationship Management (CRM), SAP Enterprise Resource Management (ERP) and Financial Management, Google Analytics, and Amazon Redshift Datawarehouse. SAP is a leading provider of software, with a multitude of product offerings. SAP CRM focuses on the end-to-end customer experience. SAP CRM allows the firm to build customer profiles that can be shared throughout the organization and provide insights that enable Zillow to identify customer experience improvements. Next, SAP CRM enables Zillow to engage with customers to create a personalized experience. The personalized experience allows Zillow to deliver the right content to the right customer, particularly ads and recommendations. SAP ERP combines several important business process functional areas within the company. Zillow will use SAP ERP to collect and monitor financial accounting information such as transactions and data. Next, ERP will be used for human resource management and execution. Finally, the SAP ERP suite will assist in business intelligence analysis function.

Zillow's primary medium to provide service and engage with customers is via their web and mobile applications. Customer behavior and interactions provide insights that drive Zillow's business operations and decision making. Zillow uses Google Analytics to collect and monitor customer interactions. Google Analytics provides web analytics enabling search engine optimization and marketing tools. The tool can be used to collect web KPIs such as unique users, bounced visit rate, page views, and session time. A major advantage of Google Analytics is that the service is free to anyone with a user account. Zillow uses Amazon Redshift as their data warehouse with Online Analytical Processing (OLAP) software that enables high performance storage and data queries.

Plan of Analysis of Data

The data analysis team will consist of data engineers, data scientists, data analysts, and business intelligence analysts. The data engineers are responsible for building the data model and managing the backend of the data. The data scientists will build complex queries and aggregate data using machine learning. Data analysts serve as a liaison between the data engineers and the business community within the company. The data analyst team will work closely with the business intelligence team. The business intelligence team is responsible for building user stories, creating dashboards and reports for business consumption.

The data analysis plan will start with a review of Zillow's data content, which will determine what data Zillow has available and how to access the data. Next, Zillow will look to define the quality of the data. Data quality deals with data currency and answers the question "Is this data up-to-date?". Data currency is such an important facet of managing data, if the data is stale, its likely worse than not having the data at all. Next, the plan will focus on defining performance requirements, and not the KPI requirements. These performance requirements outline monitoring the platform, service level agreements, and response times. Data is living and breathing, and there are times that queries break, or data fields are not populating. Stating performance requirements will guide the actions of the data team when something invariably goes wrong. Once performance requirements are determined, the team will assign roles and responsibilities, which include determining insourcing vs outsourcing. Zillow should outsource the data engineering and database administration to a company such as Accenture or INFOSYS Limited. This will enable flexible monitoring of the data warehouse, while keeping the data team lean and agile. The next step in the data analysis plan to integrate the various data sources into the data warehouse. This step includes migrating the data from the CRM, ERP, and web analytics platforms. Security and access to data is paramount, therefore, access will be granted through assigned security groups. Team members will be assigned to security groups upon onboarding to the company, team, or project. The security group will have access to needed data for report consumption and report creation. Additionally, all reports will be classified by sensitivity and whether the report is accessible by full time employees or extended team members. Finally, the data plan must be communicated to the users via onboarding training and regular monthly updates.

Performance Improvement Plan

Zillow's current landscape is uncertain, as the wind-down of Zillow Offers has lit up areas for improvement within the company. Moving forward, Zillow should implement Continuous Process Improvement (CPI) as part of the operating strategy. CPI is an enduring process that's comprised of incremental changes to workflows rather than a large-scale improvement effort that introduces mass changes. On the contrary, CPI enables a company to increase program efficiency

and effectiveness and achieve excellence. Zillow should provide training on the CPI process, which may include company sponsored Six Sigma certifications. Next, the CPI process must start with those closest to the issue, thus teams must not only be empowered to identify current problems that are impacting the workflow but have the autonomy to fix issues that arise. Next, teams should plan the improvement, which may involve tweaks to the workflow that do not require approval from higher levels in the company. Teams will then execute the changes, utilizing effective change management practices such as PROSCI Change Management. Finally, the team will monitor performance once changes are made to ensure the changes are locked in.

Conclusion

These past two years have presented unprecedented challenges and opportunities in the business realm. We've seen tremendous highs in the real estate market, and tremendous lows in the employment market. One thing has remained resolute, that is the dream of homeownership. The US housing market inventory went from 1.8M units in 2019 to under 1M units in Fall 2021. The global pandemic's effects on the economy and job market forced low interest rates that fueled a homebuying frenzy where home prices skyrocketed across the nation. This created tremendous growth in our web application, but wreaked havoc on Zillow Offer's ability to estimate home values, purchase, and sell homes. As Zillow Offers discontinues, the company will seek new strategies and methods of growing the business. Zillow must learn from the mistakes made during Zillow Offers operations by implementing this Performance Management Plan (PM) and its Balanced Scorecard. Request approval to move forward with implementation of this PM.

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