Telecommunications: Optimizing Customer Acquisition

Problem Description：

Red Ventures is a marketing company partnering with a telecommunications company to optimize customer acquisition through the telecom company's website. Customers can purchase services through an online cart or a call center sales agent, both owned by Red Ventures. To increase profits, Red Ventures is focused on optimizing customer experience.

We can do this by using visualization methods. Red Ventures can identify customer segments preferring online carts versus phone-based sales and target them with tailored website experiences, leading to improved customer experience and increased sales.

Part 1
Exploratory Data Analysis:

Red Ventures collected data for over a two-week period which includes details about visitors, orders, and session time on the telecom company's website. This information was obtained through the interactions of visitors with the site. The data in the dataset covers a two-week period in the year 2018.

The Red Ventures dataset comprises 20,256 rows and 23 columns of data collected over a two-week period. The data includes information from 51 states and 2,649 cities. By analyzing the trends in different regions, the marketing strategy can be adjusted based on demographic behavior. Results show that California had the most traffic with 3,876 visits, but the lowest conversion rate of 4%. Conversely, the state with the least traffic, Maine, had a 0% conversion rate.

The top 3 metropolitan areas with the most traffic are Los Angeles, Tampa-St. Pete (Sarasota), and Dallas-Ft. Worth, each with over 1,000 visits. These regions generated monthly charges of $6,793, $3,940, and $4,293 respectively. On the other hand, the metropolitan areas with the least traffic are Alpena, Amarillo, and Bangor, with only 1 visit and no revenue generated.

This data also shows the usage patterns of different browsers and device types. Chrome has the highest number of visits, with approximately 7,700, followed by Safari with around 4,800. Other browsers, such as Seamonkey, Puffin, and Palemoon, have limited usage, with fewer than 50 visits. However, a comparison of the orders placed reveals that while Chrome has more visits than Safari, Safari has a higher number of phone orders placed compared to Chrome. This can be further analyzed to understand the reason behind this behavior and improve the overall customer experience.

The majority of website traffic is generated through desktop devices with 14,271 visits, while mobile devices have 4827 visits and tablets have the least with 1,158 visits. Further analysis could be conducted to understand the customer behavior across different device types and to optimize the user experience. We also have different operating systems like Android, Windows XP, Windows vista from where traffic is generated.

The conversion rate of the 20,256 visits recorded in the dataset is very low, with only 663 orders placed. The company needs to investigate the reason for this.

Based on these analysis, we have come up with the following question which will help the Red Ventures firm to optimize their customer experience and acquire new customers.

Part 2

Analyzing Traffic Sources and Order Breakdown

Direct Entry- 97.7% of customers visit websites and don't place any order. 1.3% of people place phone orders. 0.9% cart order

Natural - 91.09% visit websites and don't place any order. 4.81% of people place phone orders. 3.93% of people place cart order

Paid - 97.11% visit websites and don't place any order. 1.234% of people place phone orders. 1.65% of people place cart order
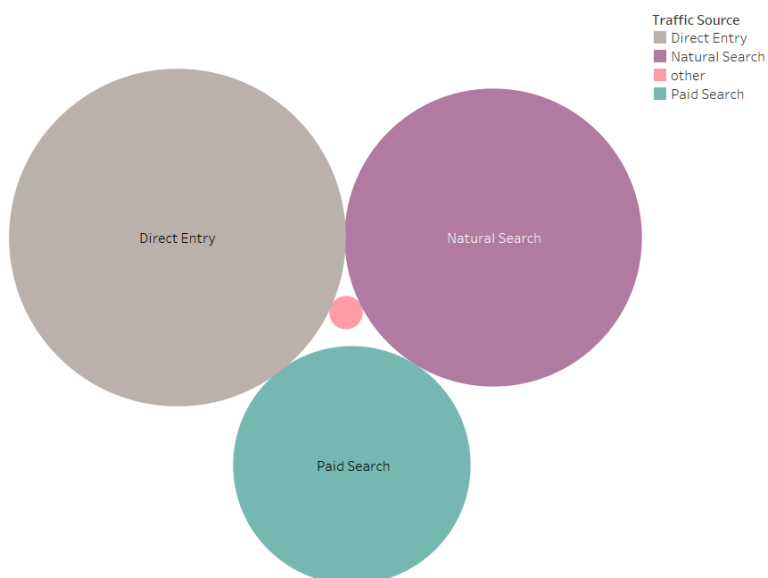
Other - 97.67% visit websites and don't place any order. 0.78% of people place phone orders. 1.55% of people place cart order

Frequency of Orders via Various traffic source

Cart Order and Phone Order for each Traffic Source. Color shows details about Cart Order and Phone Order.

Monthly Charges from Various Sources

Traffic Source. Color shows details about Traffic Source. Size shows sum of Order Monthly Charge.
The marks are labeled by Traffic Source.

From the second bar graph above, we can see we have the highest revenue from Direct entry followed by Natural search. The revenue from Direct entry is 13,152$ and revenue from Natural Search is 10,250$.

Where do we find the most potential?
Direct Entry has a lot of footprint but very few conversions happen. The customers make intentional

searches but on visiting the website, most customers don't place orders. We have to find a way to use Direct Entry to its full potential.

What can the company do better?

As shown in the bar chart, among all the successful orders, Direct Entry contributes the most orders, which accounts for 42.1%, followed by Natural Search.

In this case, there is not much need for the company to increase investment in paid marketing. Instead, the company should pay more attention to the improvement and maintenance of their website, so that the conversion rate in direct search and nature search will be increased.

Optimizing Customer Acquisition

- **Track data as early as possible.**

In order to accurately monitor the customer acquisition rate and understand the change of customer acquisition rate over time, it is necessary to start tracking the data as soon as possible, so that we can obtain all the information needed to monitor the performance of indicators and understand what strategies and functions can have an impact.

- **Optimize user guidance**

User guidance is a crucial step in the user journey and the key to achieving a high customer acquisition rate. The company has invested in acquiring users and users have opened the website. At this time, we must guide users to the website in the first session. When optimizing user guidance, we consider the following points:

（1）**To be concise**: It is important to highlight the core functions in user guidance. However, avoid providing too much information, which will burden users. We can provide the most important information in the user experience to ensure that it can easily travel through the product, and give additional options so that users can get instructions and help when needed.

（2）**Intuitive presentation**: Sometimes, pictures or animations can best catch the user's attention or explain how to use the website. We can consider using a highly infectious visual effect to make the user-guided process easy to understand.

In the Direct Entry part: One way is to conduct surveys and get people's opinion on what they don't like/find on websites(Track data as early as possible.). Then, personalized offers can be extended to tentative customers to achieve conversion. And the company also should pay more attention to the improvement and maintenance of their website, so that customers can enjoy a

convenient and efficient experience, like chat bots for instance, for seamless purchases when they land on the website.

In the natural search part: Since there is a high conversion rate with natural search, we infer that the services offered by the company does well with competitors. With the existing potential, Red Ventures should leverage its brand reputation to attract more customers.

In paid search, there is not much need for the company to increase investment in paid marketing. Or the company can show personalized ads as per region, customer browsing and spending behavior instead of common ads.

The company can also follow up with people who have pending items in their cart or those who make phone calls without purchases.

Which states have the highest and lowest conversion rates?

The above map shows visits to Red Ventures website in percentile, with actual range 0-33%. The highest visits are from California with 3876 visits and 109 orders (4.43% conversion rate.) The second highest visits are from Florida with 2417 visits and 97 orders (4.01% conversion rate). The third highest

State Wise Total Order

Hourly Trend of Phone Vs Cart Order
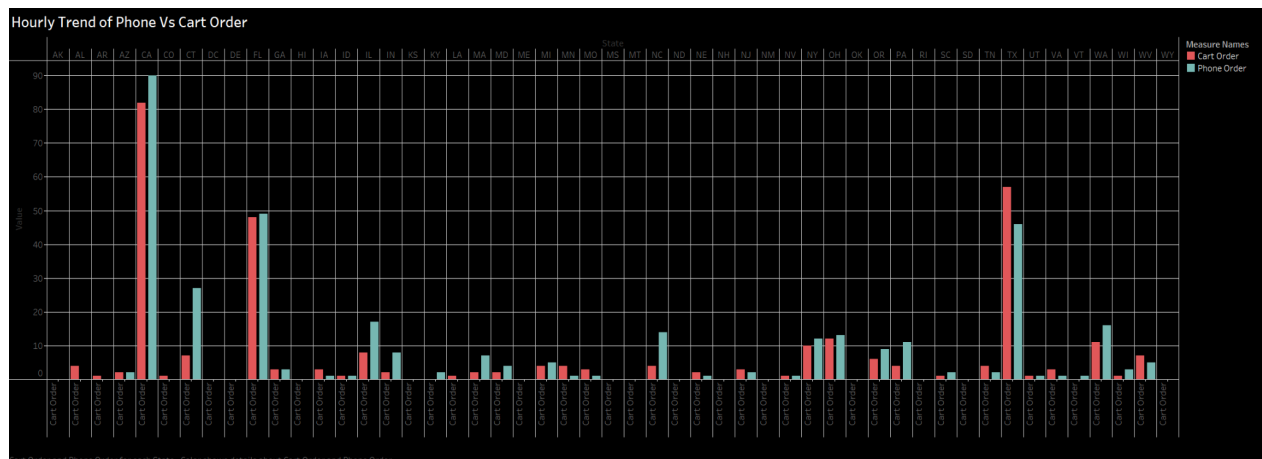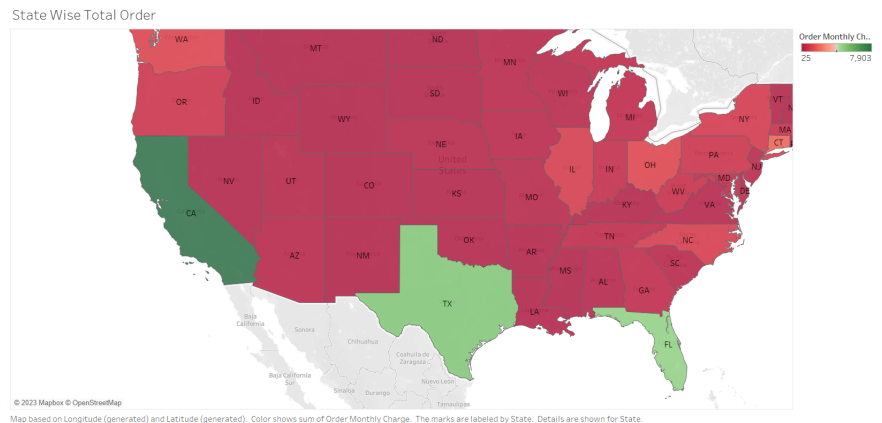
visits are from Texas with 2371 visits and 103 orders (4.3% conversion rate). The least visits are in Maine, Vermont, Arkansas, North Dakota and South Dakota.

The above scatter plot shows the Trend of Phone and Cart orders in various states. We can see that California has the highest order rates with 90 phone orders and 82 cart orders, followed by Texas with 46 phone orders and 57 cart orders. Whereas Alaska, District of Columbia, Delaware, Vermont, Arkansas and North Dakota have no order history.

<u>Where do we find the most potential?</u>
There are states that have a considerably high number of visits, like the ones mentioned above. In addition to CA, FL and TX, we have Connecticut, Indiana, Illinois, New York, Pennsylvania and Washington that have over 800 visits in a 16 day period.

<u>What can the company do better?</u>
As shown in the map and the chart above, Red Ventures can conduct market research to study consumer behavior and preferences in each state to understand what drives sales in that region or what particular product is in high demand and cater to it. Accordingly, the approach to customers in different regions can be tailored.
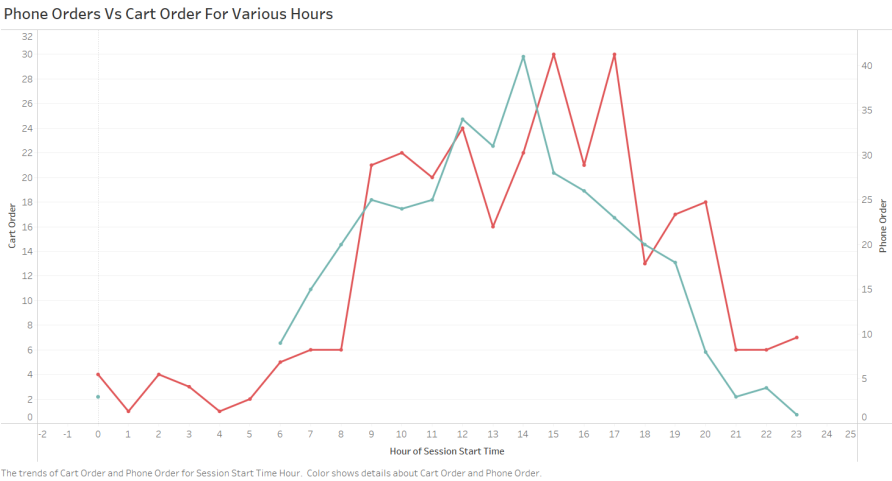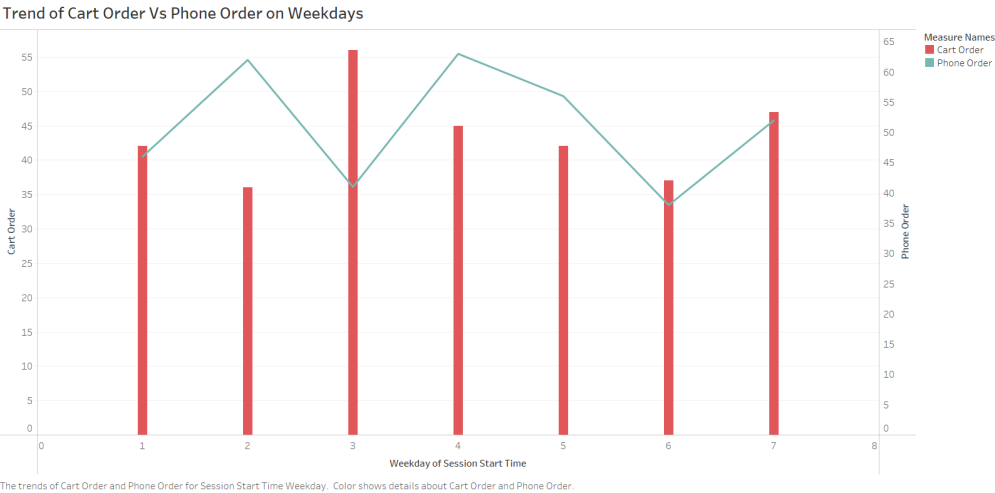
<u>Optimizing Customer Acquisition</u>

- Red Ventures can use personalization as a powerful tool to increase user retention. In fact, 91% of consumers prefer to provide personalized products and recommended brands, and 90% of American consumers think that personalization during browsing is more attractive. To achieve personalization, the personalization of products can be improved according to user preferences through user data, addressing user names, providing relevant recommendations, etc. These personalization adjustments will be optimized over time, making users more willing to return to the website continuously.
- They can use email marketing to improve brand loyalty, increase interaction, and gradually increase customer acquisition over time. Create a valuable list of email subscribers and share exclusive discounts, special offers and other promotional information through email to attract users to return to the products.

In states where Red Ventures has brand awareness, marketing schemes can be customized and different promotions can be offered to appeal to customers with different needs and interests. This would make a difference in customer conversion and retention.
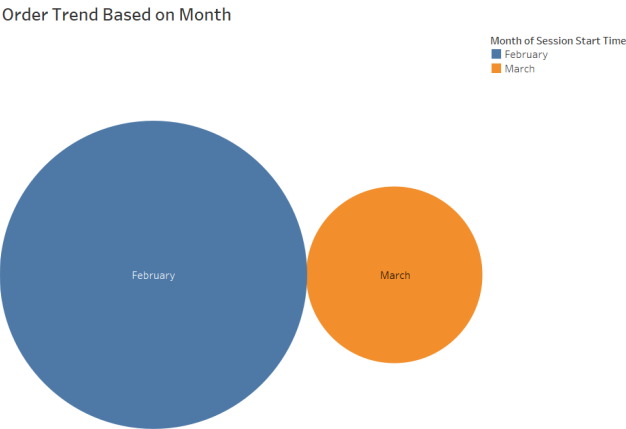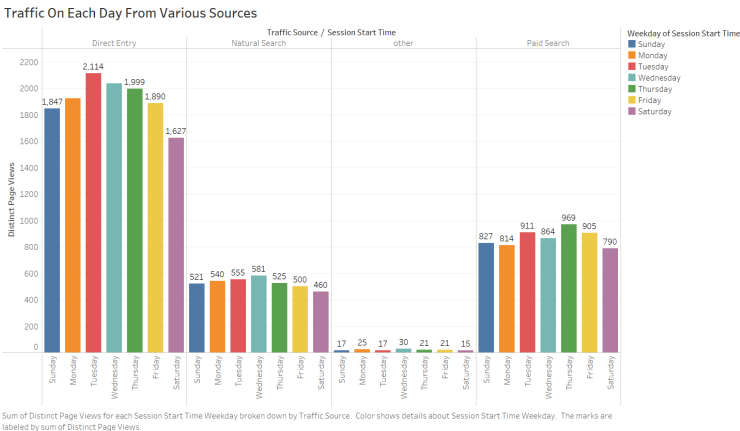
In states where Red Ventures is less popular, the company can try to obtain a market share by popularizing their services by partnering with social media influencers. The company can also try to do a trial run with services similar to competitors in the respective state to grow a customer base. They can also participate as a sponsor at a few local events like trade shows and fairs under a certain budget, to make themselves more popular.

Analyzing Traffic Patterns: Identifying Peak Traffic Periods and Strategies to Improve Acquisition Rate

The above graphs show the incoming traffic during a 24-hour duration on different days of the week.

From the first graph above we can see traffic across different hours a day. During 10am to 2pm we have the highest traffic. The highest number of visits is 1368 at 11am in the

Trend of Cart Order Vs Phone Order on Weekdays

The trends of Cart Order and Phone Order for Session Start Time Weekday. Color shows details about Cart Order and Phone Order.

morning and lowest number of visits is 150 at 3am.

From the second Graph we can get a clear view of phone and cart order rates. The highest cart order rate is 30 at 5pm. The highest phone order

Phone Orders Vs Cart Order For Various Hours

The trends of Cart Order and Phone Order for Session Start Time Hour. Color shows details about Cart Order and Phone Order.

Traffic On Each Day From Various Sources

Sum of Distinct Page Views for each Session Start Time Weekday broken down by Traffic Source. Color shows details about Session Start Time Weekday. The marks are labeled by sum of Distinct Page Views.

Order Trend Based on Month

rate is 41 at 2pm. Whereas the lowest cart order is 1 at 4am in the morning and the lowest phone order rate is 0 in the midnight

Where do we find the most potential?

From the graph that shows hourly traffic, it is seen that there is a sharp rise during the morning hours and at 10am, it starts to peak. The highest visits are obtained between 12 noon to 2pm. During these hours the visits

The trends of sum of Cart Order and sum of Phone Order for Session Start Time Weekday. Color shows details about Device Type. The marks are labeled by Device Type.

range from 1000 to 1370. There is a slight fall by 3pm and the next busiest session is from 3pm to 7pm, where the visits are still over 1000. The pattern remains consistent even with the top 10 states having the most traffic.

Similarly, highest visits are recorded during the mid of the week, Tuesday through Thursday. Surprisingly, there are fewer visits on the weekends. Also, phone orders seem to do better in comparison to cart orders. Red Ventures can utilize this information to promote sales during the said days and hours with most traffic.

What can the company do better?

Red Ventures can streamline their website checkout process to make the process easier for customers to prevent abandonment of cart orders. They can also make their website faster so that customers don't have to wait for the website to respond. It can also be made more interactive so that users who opt for cart purchasing have a better experience.

The company must optimize their phone operations so that customers don't face long wait times on calls. Training customer service representatives to provide address queries and resolve issues can improve customer satisfaction. To make the most of the peak hour traffic, offers and promotions can be extended to entice customers.
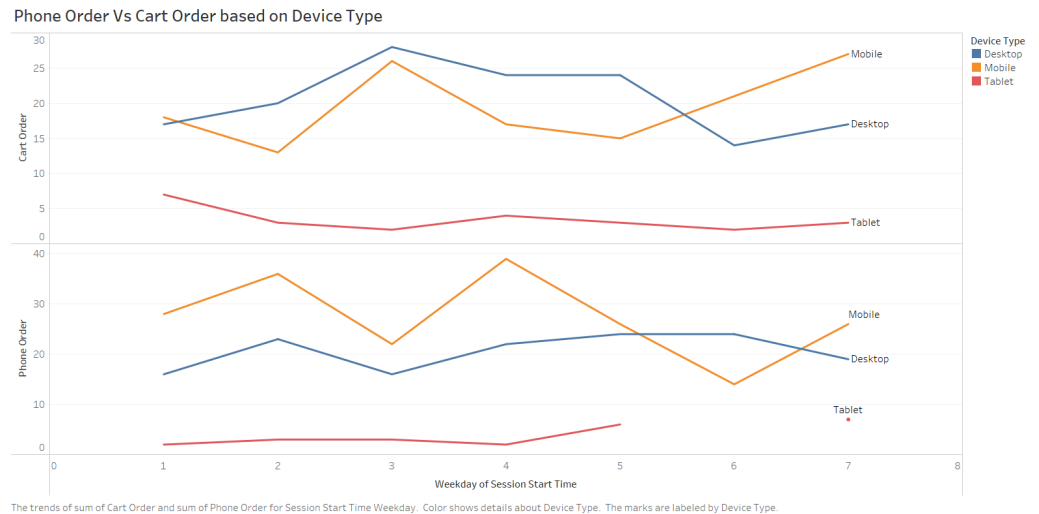
Optimizing Customer Acquisition

- **Push Notifications**

Due to the time session of placing orders, we can use Notifications in the peak time session to get the customer acquisition rate. Push notifications can be sent directly to the user's device and displayed on the user's lock screen. However, the user needs to grant a license before the website can push notifications. Push notification is an effective way of communication, which can attract users to return to the application and improve customer acquisition rate. Through these notifications, relevant and compelling advertisements can be used to reach potential customers.

- **Promotional Offers**

From the data, most visits are on Tuesdays. Hence, offers can be extended on the said day during peak hours to attract more customers. They could offer incentives for referrals like discounts or offers for those who refer their friends or relatives. They could also offer limited time discounts, which may compel customers to purchase products before the deadline. They could also bundle deals for their services -cable tv, phone and internet or offer incentives to existing customers who want to upgrade their services. These measures could help maintain customer loyalty and attract new customers.