**Project Title:**

**“A Project to Analyze the Customer Funnel of a Metro car Ride Sharing App (similar to Uber or Lyft) to Identify Areas for Improvement and Optimization”.**

**Author:**

**Ejikeme Justine Ekwem**

**Master school**

**Funnel Analysis Mastery Project.**

**November 2023.**

**Executive summary:**

1. The need to prioritize further optimization of the iOS app due to its dominance, tailoring features to iOS preferences and ensuring compatibility. While iOS is leading, strategic investments in Android and web improvements are essential to enhance overall user experience.

2. Tailoring marketing efforts to the 35-44 age group, the most active user segment, to significantly boost engagement, satisfaction, and overall user retention.

3. Addressing a significant drop in the conversion rate, particularly from payment to the review stage, as a critical bottleneck. Resolving this issue is crucial for improving the customer funnel's efficiency and increasing user retention through streamlined processes, reduced friction, and encouragement to complete the entire funnel.

4. Recognizing specific peak times for ride requests and ensuring optimal service during these periods. This involves resource allocation, system efficiency improvements, and enhancing the user experience, particularly during high-traffic hours at 4:21:00 PM and 9:07:46 AM.

5. Advocating for a proactive approach, stakeholders are advised to regularly monitor user trends, platform preferences, and customer funnel performance. Employing adaptive strategies to respond to changing user behaviours and market dynamics is crucial for sustained growth and user satisfaction.

**Table of Content:**

1. Introduction to Metro Car Business---------------------------------------4
2. Problem statement-----------------------------------------------------------4

3.0. Funnel Analysis--------------------------------------------------------------4

4.0. Objective of the Project-----------------------------------------------------5

5.0. Significance of the Project------------------------------------------------- 5

6.0. Methodology-----------------------------------------------------------------6

7.0. Funnel Analysis Visualization---------------------------------------------6

8.0. Analysis of Metro Car Stakeholders' Business Questions-------------7

8.1. Funnel stages requiring Research and Improvement-------------------7-8

8.2. **Metro Car Application Platform Visualisation--------------------------9**

8.3. Age group performance----------------------------------------------------9-10

8.4. **Ride Requests Distribution for the day----------------------------------10**

**8.5. Lowest conversion rate in the Funnel------------------------------------11**

**9.0.** Recommendations to Stakeholders---------------------------------------11

10.0. Limitation of the Project---------------------------------------------------11

11.0. Conclusion-------------------------------------------------------------------12

12.0. References-------------------------------------------------------------------12-13

13.0 Appendices------------------------------------------------------------------13-15

**1.0. Introduction**

Metro Car operates on a business model centered around a platform connecting riders with drivers via a mobile application. Serving as an intermediary, Metro Car facilitates the ride-hailing process by providing a user-friendly platform.

**2.0. Problem statement**

Stakeholders have posed business questions aimed at gaining insights to enhance specific aspects of the customer funnel, which involves conducting a customer funnel analysis to address these questions and identify opportunities for improvement in the targeted areas.

**3.0. Funnel Analysis**

**Funnel analysis** isa method of data analysis used to track and understand the sequential steps or stages that users or customers go through when interacting with a product, service, or website. It's called a "funnel" because the shape of the analysis resembles that of a real-world funnel-wide at the top and narrow at the bottom. However, it could also be easily represented by a bar chart.

Funnel analysis allows businesses and organizations to identify where users drop off or convert, helping them to ultimately increase desired outcomes, such as sales, sign-ups, or conversions. It is widely used in e-commerce, marketing, and product development to drive growth and revenue.

A diagram of a sales funnel

Description automatically generated

Fig. 3.0: A Typical Sample of the Customer Funnel. Source: Lecture slide.

**4.0. Objective of the use of funnel analysis for the Project**

The key objective of the project is to perform a comprehensive customer funnel analysis to derive valuable insights and effectively respond to the identified business questions.

Specifically, the project aims to:

1.Research and pinpoint specific drop-off points in the customer funnel that prevent users from completing their first ride. Understand and address potential friction points in the application download to sign-up process to facilitate a seamless user journey.

2.Analyze platform-specific data to recommend where to focus the marketing budget for the upcoming year. Provide insights into user behavior on iOS, Android, and the web, guiding stakeholders in tailoring marketing efforts to the most promising platforms for user acquisition and.

3.Investigate and determine which age groups perform best at each stage of the customer funnel. Identify age groups that likely contain the target customer base, enabling more effective and targeted marketing strategies to capture and retain the most valuable users.

4.Examine the distribution of ride requests throughout the day to inform the adoption of a surge pricing strategy. Understand peak demand times to optimize pricing dynamically, maximizing revenue during periods of high user activity.

5.Identify the part of the customer funnel with the lowest conversion rate and develop strategies to improve this specific stage. Implement interventions that streamline processes, reduce friction, and enhance user satisfaction to drive higher completion rates.

**5.0. Significance of the Project**

The customer funnel in the Metro car project holds significant importance for various reasons.

* It serves as a critical tool for understanding how Metro car business attracts and onboards customers.
* By analysing the customer funnel, the business can identify areas where it can reduce acquisition costs and improve conversion rates, which directly impacts profitability and the return on investment for stakeholders.
* Understanding the funnel allows stakeholders to compare its user acquisition and retention strategies to competitors like Uber and Lyft, enabling the company to learn from best practices and stay competitive.
* The funnel provides insights into growth potential, helping stakeholders to identify which stages of the customer journey may require more attention or resources to expand its user base and market share.
* The customer funnel empowers the business with valuable data to make informed decisions, refine marketing strategies, and enhance the overall customer experience. This data-driven approach can lead to better decision-making and a more successful business operation.

**6.0. Methodology**

The Metro Car database is employed to retrieve datasets through SQL and is subsequently downloaded in Microsoft Excel's CSV file format. These datasets, forming part of the aggregate data for analysis, underwent additional analysis for enhanced insights. The results are visually presented on Tableau, providing a valuable resource for decision-making. See references below for details on the database.

The table below contains the sizes of the datasets for the funnel items, retrieved from the database using SQL, which were utilized for subsequent analysis and visualization.

|  |  |  |  |
| --- | --- | --- | --- |
| **Funnel\_step** | **Funnel\_name** | **user\_count** | **Ride\_count** |
| 0 | download | 23608 |  |
| 1 | signup | 17623 |  |
| 2 | ride\_requested | 12406 | 385477 |
| 3 | ride\_accepted | 12278 | 248379 |
| 4 | ride\_completed | 6233 | 223652 |
| 5 | payment | 6233 | 212628 |
| 6 | Review | 4348 | 156211 |

Fig. 6.0. Dataset table user count. Own source

**7.0. Customer Funnel Analysis visualization of Metro car Business**

A graph with colorful squares

Description automatically generated with medium confidence

Fig. 7.0. Own Source: Tableau. Metro Car Customer Funnel Analysis

* Download: 23608 is the total number of individuals who downloaded the Metro Car app from the App Store or Google Play Store with an iOS phone, Android device, or through the web.
* Signup: 17623 is the total number of users who create an account in the Metro car app, including their name, email, phone number, and payment information.
* Request Ride: 12406 are the users who open the app and request a ride by entering their pickup location, destination, and ride capacity.
* Driver Acceptance: The funnel shows that 12,278 ride requests were accepted by the metro car drivers.
* Ride completed: The funnel shows that 6233 rides requested were completed by the drivers to the destination of the users.
* Payment: 6233 is the total number of users that were successfully charged automatically through the app, and a receipt is sent to their email.
* Review: 4348 is the total number of users who were prompted to rate their driver and leave a review of their ride experience.

**8.0. Analysis of the Stakeholders’ business questions.**

Metrics and Key Performance Indicators (KPIs) serve as valuable tools, offering insights into the performance of crucial customer funnel activities aligned with business inquiries. These data-driven metrics empower businesses to make informed decisions aimed at enhancing overall performance.

The subsequent analysis delves into stakeholders' business questions, utilizing these business metrics to provide comprehensive insights and inform strategic decision-making.

**8.1. Stages of the Customer funnel requiring improvement in the Business.**

Identifying areas for enhancement in the customer funnel involves focusing on three specific stages. The analysis employs the "percent of previous stage" approach, chosen for its normalized perspective, facilitating meaningful comparisons and the identification of performance trends. This method allows businesses to evaluate relative conversion rates at each stage, providing valuable insights into the effectiveness of the customer journey.

1.Application downloads to sign-up stage.

The drop in conversion from application download to sign-up, from 100% to 74.65%, suggests potential challenges or barriers in the user onboarding process; several factors could contribute to this difference as highlighted below: and indicate areas for improvement:

* The onboarding process may not be intuitive or user-friendly, leading to users abandoning sign-up midway.
* Users might lack trust in the application or have concerns about data security, impacting their willingness to sign up.
* Glitches, bugs, or technical errors during the sign-up process may frustrate users and lead to abandonment.
* If the application is not optimized for various devices, it could hinder users from signing up on certain platforms.
* The sign-up process may have unnecessary complexities, deterring users from completing the registration.
* Insufficient or ineffective communication about the sign-up process and its benefits may contribute to the drop-off.

2. Ride accepted to Ride completed stage.

The significant drop in the conversion rate from ride acceptance (98.97%) to ride completion (50.77%) indicates potential challenges in the execution and fulfilment stages of the customer funnel. Several factors could contribute to this difference and signal areas for improvement:

* A shortage of available drivers might lead to accepted rides not being fulfilled, impacting completion rates.
* Issues with the routing or navigation system could cause delays or difficulties in completing rides.
* Poor communication between drivers and users may lead to misunderstandings, cancellations, or incomplete rides.
* Riders may have experienced subpar service during the ride, influencing their decision to discontinue the trip.
* Technical issues within the application, such as payment processing or connectivity problems, could hinder the completion of rides.
* Unpleasant in-ride experiences, such as uncomfortable vehicles or unprofessional behaviour, can impact ride completion.
* Users might feel unsafe during the ride, prompting them to terminate the trip prematurely.

3. Payments to review stage.

The review stage provides necessary feedback that would help the stakeholders and management review their strategy and operations for better performance based on feedback received from users. In this step, the drop in conversion from the total number of payments (100%) to the total number of reviews (69.76%) suggests that there might be challenges in encouraging users to provide feedback after completing a payment. Several factors could contribute to this difference and indicate areas for improvement:

* Users may not be prompted or encouraged to leave reviews after making a payment.
* If the payment process is cumbersome or confusing, users might be less inclined to provide positive feedback.

**8.2**.  **Application platform device**

A graph with blue and orange squares

Description automatically generated

Fig. 8.2. Own Source: Tableau. Metro Car Application Platform

Fig. 8.2 presents a pie chart detailing the distribution of user application platforms and their corresponding usage percentages. Notably, the iOS phone dominates usage, accounting for 60.88% of the total, with users employing it 237,871 times. In contrast, the Android phone follows with 29.14% usage, totalling 113,846 instances, while the web platform lags with 9.98%, reflecting 38,977 uses. The analysis underscores the substantial preference for the iOS phone, indicating a significant 60.88% higher usage compared to the Android phone.

Top of Form

**8.3. Age Group performance**

A colorful bar chart with text

Description automatically generated with medium confidence

Fig. 8.3. Own Source: Tableau. Metro car Age group performance

Fig. 8.3 illustrates the age distribution of users of the metro car app. The age group 35–44 emerges as the most frequent users, accounting for 29.62% and utilizing the app 115,728 times. Following closely are the age groups 25–34, with 76,258 users contributing 19.52%,18–24, and 45–54 with 41,185 and 40,224 users contributing, 10.54%, and 10.30%, respectively. Notably, the analysis underscores the significance of the 35–44 age group, which demonstrates the highest engagement compared to other demographics. The 'unknown' age group, classified under GDPR, constitutes 30.02% with 117,299 users. However, due to its unassignable nature to specific age brackets, it was excluded from the analysis to prevent potential distortion and bias in the results, ensuring the accuracy of information presented to stakeholders.

**8.4. Ride Requests Distribution Outlook for the Day.**

A graph of colored lines

Description automatically generated with medium confidence

Fig. 8.4. Own Source: Tableau. Ride Request Distribution for the Day

Fig. 8.4, a line chart, illustrates the daily distribution of ride requests in the metro car app. Notably, the chart highlights two peak periods with the highest number of ride requests: one occurring at 4:21:00 p.m. with 115 users, and another at 9:07:46 a.m with 111 users. These time points represent the instances of the day when ride requests reached their maximum, providing insights into the app's usage patterns throughout the day.

**8.5. Lowest conversion rate in the funnel**

Utilizing a percentage-based analysis, the customer funnel reveals its lowest conversion rate at the 'payment to review' stage. Specifically, there is a substantial decline of 69.76% in the conversion rate from the number of payments made to the subsequent review stage, indicating a significant drop in user engagement or completion of the conversion process at this stage.

**9.0. Recommendations to Stakeholders**

Following the analysis and findings addressing the business questions raised by stakeholders, the following recommendations are proposed:

1. Given the dominance of iOS usage, stakeholders should prioritize further optimization of the app, introducing features that cater to iOS users' preferences and ensuring compatibility with the latest iOS updates. While iOS is leading, there is a substantial user base on Android and the web. Stakeholders should invest in improvements for these platforms, addressing any identified issues to enhance user experience and increase usage.

2. Focus marketing efforts on the 35-44 age group, as they constitute the highest number of app users. Tailor promotions and campaigns to resonate with the preferences and needs of this age segment to further boost engagement.

3. Identify specific issues causing the significant drop in the conversion rate on each customer funnel stages specifically, from the payment to the review stage. Implement strategies to streamline this process, reduce friction, and encourage users to complete the entire customer funnel.

4. Since the ride requests peak at specific times (4:21:00 PM and 9:07:46 AM), stakeholders should ensure that the service is optimized during these hours to handle increased demand efficiently.

**10.0. Limitations in the A/B Test of the project**

During the age group analysis to assess performance in the utilization of the Metro car app, a noteworthy observation was made. Specifically, 30.02% of the data, comprising 117,299 users, lacked age information, and was classified under GDPR as the 'unknown' group in the analysis. This substantial portion of missing data raises concerns about the potential impact on the accuracy of our analysis and results, introducing the risk of bias.

The absence of age information for a significant number of users highlights the importance of acknowledging and addressing potential limitations in the data, ensuring a more comprehensive and reliable interpretation of the findings.

**11.0. Conclusion**

1. Tailor development, budget, and marketing strategies to the clear preference for iOS, which has a significantly higher usage percentage compared to Android and the web.

2.The 35-44 age group segment is the most active user group; align marketing and service improvements with their preferences and needs to enhance user satisfaction and retention.

3.The observed drop in conversion from payment to the review stage is critical; resolving this bottleneck is essential for improving overall customer funnel efficiency and increasing user retention.

4. Recognize peak times for ride requests and ensure the service can handle increased demand during these periods; optimization may involve resource allocation, system efficiency improvements, and enhancing user experience during high-traffic hours.

**12.0. References**

Below is the database table structure for Metro Car Business:

**app\_downloads**: contains information about app downloads

* + app\_download\_key: unique id of an app download
  + platform: ios, android or web
  + download\_ts: download timestamp.
* **signups**: contains information about new user signups.
  + user\_id: primary id for a user
  + session\_id: id of app download
  + signup\_ts: signup timestamp
  + age\_range: the age ranges the user belongs to
* **ride\_requests**: contains information about rides
  + ride\_id: primary id for a ride
  + user\_id: foreign key to user (requester)
  + driver\_id: foreign key to driver
  + request\_ts: ride request timestamp
  + accept\_ts: driver accept timestamp.
  + pickup\_location: pickup coordinates
  + destination\_location: destination coordinates
  + pickup\_ts: pickup timestamp
  + dropoff\_ts: dropoff timestamp
  + cancel\_ts: ride cancel timestamp (accept, pickup and dropoff timestamps may be null)
* **transactions**: contains information about financial transactions based on completed rides:
  + ride\_id: foreign key to ride
  + purchase\_amount\_usd: purchase amount in USD
  + charge\_status: approved, cancelled.
  + transaction\_ts: transaction timestamp
* **reviews**: contains information about driver reviews once rides are completed.
  + review\_id: primary id of review
  + ride\_id: foreign key to ride
  + driver\_id: foreign key to driver
  + user\_id: foreign key to user (requester)
  + rating: rating from 0 to 5
  + free\_response: text response given by user/requester.

**13.0. Appendix**

The appendix includes SQL codes and links to visualizations of metrics and key performance indicators (KPIs) on Tableau.

**SQL query code:**

1.Number of times the app was downloaded? (23,608)

SELECT COUNT (app\_download\_key) As app\_download\_count

FROM app\_downloads;

2. Number of times users signed up on the app (17,623)

SELECT COUNT (user\_id) As user\_count

FROM signups;

3. Number of times rides were requested through the app. (385,477)

SELECT COUNT (ride\_id) As ride\_count

FROM ride\_requests;

4. Number of rides requested and completed through the app. (ride requested is 385,477 and ride completed is 223,652).

SELECT COUNT (dropoff\_ts) as ride\_completed,

COUNT (request\_ts) as ride\_requested

FROM ride\_requests

ORDER BY ride\_completed;

5.Number of rides requested and number of unique users that requested a ride. (Ride requested is 385,477 and the unique user\_ids are 12,406).

SELECT COUNT (request\_ts) as ride\_requested,

COUNT (DISTINCT (user\_id)) as unique\_user\_id

FROM ride\_requests

ORDER BY ride\_requested;

7.Number of rides accepted by a driver. (248,379)

SELECT COUNT (accept\_ts) As count\_ride\_accepted

FROM ride\_requests;

8. Number of User ride accepted (12,278)

SELECT R.user\_id,COUNT(R.accept\_ts) As count\_ride\_accepted

FROM ride\_requests as R

JOIN metrocar AS M

ON R.accept\_ts=M.accept\_ts

GROUP BY R.user\_id

ORDER BY count\_ride\_accepted;

9.Number of rides that were successfully collected payments for and amount collected. (212,628 total rides, $4,251,667.61)

SELECT

COUNT (DISTINCT ride\_id) AS total\_rides\_requested,

ROUND (SUM (purchase\_amount\_usd)::NUMERIC,2)AS total\_amount\_collected

FROM transactions

WHERE charge\_status='Approved';

10. Number of unique users that completed a ride through the Metrocar app. (6233)

SELECT COUNT (DISTINCT user\_id) AS count\_distinct\_users

FROM metrocar

WHERE dropoff\_ts IS NOT NULL

ORDER BY count\_distinct\_users;

Query code for Age range and platform metrics

SELECT s.age\_range,m.platform,m.download\_ts,COUNT(s.user\_id)As user\_count

FROM signups As S

left Join metrocar As M

ON S.user\_id=M.user\_id

GROUP BY s.age\_range,m.platform,m.download\_ts

order by user\_count;

Query code for Distribution for ride requests

SELECT s.age\_range,m.platform,m.download\_ts,COUNT(R.ride\_id)As ride\_count

FROM signups As S

left Join metrocar As M

ON S.user\_id=M.user\_id

Join ride\_requests As R

ON M.ride\_id=R.ride\_id

GROUP BY s.age\_range,m.platform,m.download\_ts

order by ride\_count;

**Tableau Visualization Links:**

Metro car customer funnel analysis

<https://public.tableau.com/app/profile/ejikeme.justine.ekwem/viz/MetrocarFunnelAnalysis_16992188757090/MetrocarFunnelAnalysis?publish=yes>

Platform device analysis

<https://public.tableau.com/app/profile/ejikeme.justine.ekwem/viz/PlatformPerformanceAnalysis_16992298869300/Platform?publish=yes>

Age Group performance Analysis

<https://public.tableau.com/app/profile/ejikeme.justine.ekwem/viz/AgeGroupPerformanceAnalysis/AgeGroup?publish=yes>

Distribution of Ride Request

<https://public.tableau.com/app/profile/ejikeme.justine.ekwem/viz/DistributionofRideRequest/DistributionofRideRequest?publish=yes>

**Video presentation link**

[**https://www.loom.com/share/72a503b8ac884455830c29d00f6d5a85**](https://www.loom.com/share/72a503b8ac884455830c29d00f6d5a85)