365 Sign-Up Flow Optimization Analysis Report

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1. Current State of Affairs

Sign-Up Data Insights:

Failed sign-up attempts by device: sum of failed sign-up attempts by device / sum of all sign-up attempts

- Desktop: 1.16%
- Mobile: 3.24%

Failed sign-up attempts by OS:

- The most failed attempts: Android (2,309)
- The most successful retries: Android (4,077)

Fail rates by sign-up method: sum of failed sign-up attempts by method / sum of total sign-up attempts by method

- Google: 3.2%
  - The most favorited sign-up method with the lowest fail rate
- Email: 6.5%
  - Second most popular sign-up method, but significant fail rate
- LinkedIn: 4.0%
  - Less popular sign-up method, and low fail rate
- Facebook: 7.6%
  - Comparable number of sign-up attempts as LinkedIn, but has a significant fail rate

Frequent sign-up issues on mobile devices:

- Total Google fails: 1,772
- Total Google mobile fails: 1,063
- Precent of Google fails on mobile: 60.0%
  - 778 (73.2%) of those fails on mobile are related to the pop-up window being closed prematurely

- Total email fails: 1,508
- Total email mobile fails: 1,273

- Percent of email fails on mobile: 84.4%
  - 1,079 (84.8%) of those fails on mobile are related to entering an invalid email address or name
- Total LinkedIn fails: 227
- Total LinkedIn mobile fails: 187
- Precent of LinkedIn fails on mobile: 82.4%
  - 131 (70.1%) of those fails on mobile are related to issues with the reading display image
- Total Facebook fails: 398
- Total Facebook mobile fails: 351
- Percent of Facebook fails on mobile: 88.2%
  - 349 (99.4%) of those fails are unknown

Direct success rates by sign-up method: sum of direct success attempts by sign-up method / sum of total sign-up attempts by method

- Google: 91.6%
- Email: 77.1%
- LinkedIn: 88.4%
- Facebook: 71.7%

Direct Success Rates on Mobile Devices by Sign-Up Method: sum of direct success attempts by sign-up method on mobile / all attempts by sign-up method on mobile

- Google: 91.0%
- Email: 64.9%
- LinkedIn: 86.5%
- Facebook: 69.3%

External factors for different sign-up methods:

- Google: Widely used for sign-ups
- Email: Doesn't require sharing personal data
- LinkedIn: Mostly used for professional networking
- Facebook: Mostly used for connecting with friends and family

Internal factors:

- Google: The most screen area for the social media options and requires less steps during the sign-up process
- Email: The most screen area on the platform overall, and currently presents empty input fields on the sign-up page
- LinkedIn: Small screen area overall
- Facebook: Small screen area overall

*__November 2022 outlier:__ November has a significantly higher conversion rate due to the 365-platform launching a 21-day free campaign that provided unlimited access to all content.

Log-In Data Insights:

Failed log-in attempts by device: sum of failed log-in attempts by device / sum of all log-in attempts

- Desktop: 6.9%
- Mobile: 8.9%

Fail Rates by log-in method: sum of failed attempts by log-in method / sum of total log-in attempts by method

- Email: 25%
  - 74.6% (40,454) of those failed attempts are due to invalid password or email
  - 25.6% (13,647) are due to failure to input an email or password during log-in
- Google: 6.2%
  - 98.3% (12,910) of those failed attempts are due to pop-ups being closed by the user
  - 5,391 failed Google log-in attempts are made on an Android operating system and 6,207 are made on a Windows operating system, while only 359 are made on iOS and 418 are made on Mac OS
    - In combination with Android and Windows, nearly all the error messages are due to pop-ups being closed by the user (11,460 of 11,598)
    - The cause of these errors could include slow-loading window, technical issues, browser extensions that could automatically close or block the pop-up, and accidental closer by the user
- LinkedIn: 15.7%
  - 73.2% (1,530) of those failed attempts are related to issues with the reading display image
- Facebook: 23.1%
  - 99.9% (2,771) of those failed attempts are unknown

After analyzing the current state of affairs, we found that visitors frequently encountered issues while trying to register on the platform via email on mobile devices. This finding is notable because email sign-up, although the second most common method, registers a substantial number of unsuccessful attempts. Additionally, our findings reveal that Google, the most popular alternative, exhibits higher success rates compared to email for sign-up attempts overall.

2. Business Objective

Our main goal is to achieve ongoing business growth by increasing our registered user base. By increasing the visitors-to-free users conversion rate, we anticipate a subsequent rise in paid subscriptions. A high visitor-to-free conversion rate reflects our ability to capture our target audience's interest and encourage them to explore our offerings for free. This, in turn, is expected to result in a gradual increase in paid subscription, leading to an overall increase in revenue.

3. Hypothesis

Question we want to answer: What factors would contribute to a higher sign-up conversion rate?

We suspect that the email sign-up section is appearing to small on mobile devices, causing a majority of the errors. To address this issue, we propose modifying the email sign-up process to emulate the efficiency and success of Google's mobile registration method. This involves having users input their information on a separate window after initially selecting the email option, following the mirroring method.

Our hypothesis is that by highlighting the more effective social media sign-up options, such as Google, users will be encouraged to choose them. This presents an opportunity for a rise in the visitor-to-free conversion rate.

Considering the platform's free-to-paid conversion rate, the implementation of these suggested changes could potentially drive an increase in the count of free registered users, resulting in a boost in paid subscriptions. Ultimately, this strategic adjustment is poised to contribute significantly to the overall growth of the business's revenue.

- **Lowest visitor-to-free conversion rate month:** Dec. 2022 (~2%)
- **Highest visitor-to-free conversion rate month:** Aug. 2022 (~ 5%)
- **Current visitor-to-free conversion rate:** 2% - 5%
    - Difference: 3%
    - Industry standard is a 2% growth rate

*__November 2022 outlier:__ November has a significantly higher conversion rate due to the 365-platform launching a 21-day free campaign that provided unlimited access to all content.

Industry benchmark for an optimization in a sign-up process is a lift between 10% - 30%

- January 2023: ~ 3%

With a lift of 10% would be 3.3%
10% x 3% = 0.3%
0.3% + 3% = 3.3%
With a lift of 30% would be 3.9%
30% x 3% = 0.9%
0.9% + 3% = 3.9%

Given that our current metrics are within the expected range, we will aim for a conservative uplift of 10%. If the hypothesis is validated, we will gain confidence to predict more ambitious improvements in the future.

Based on the growth dashboard…
*Growth dashboard contains the free-to-paid conversion rate info and can be found in the growth analysis project provided by 365 Data Science.

We would need to bring **655** more users than January to meet the **10% lift.**
3% x 215,120 visitors = 6,454 free users in January
3.3% x 215,120 visitors = 7,099 free users
7,099 free users – 6,454 free users = 655

Of the 6,454 free users in January, **213** became paying customers
6,454 free users x 3.3% (free-to-paid% for Jan) = 213 customers
Yield Revenue: $6,390
213 customers x $30 (per customer) = $6,390

With the 10% lift, we should obtain a total **of 234** paying customers
3.3% x 215,120 visitors = 7,099 free users x 3.3% (free-to-paid% for Jan) = 234 customers
Yield Revenue: $7,020
234 customers x $30 = $7,020

Average visitor-to-free conversion rate: 3.2%
We took each month's conversion rate (excluding November since it is an outlier) and divided it by the total number of observed months.
2.91% + 4.89% + 2.73% + 3.37% + 1.94% + 3.04% / 6 = 3.2%

Average free-to-paid conversion rate: 3.9%

4. Opportunity Sizing

By highlighting the social media sign-up options and aim for a 10% lift in our *average visitor-to-free conversion rate,* we anticipate an increase in our average visitor-to-free conversion rate from 3.2% to approximately 3.54%.
3.2% + (10% x 3.2%) = 3.52%
This will result in an expanded pool of free registered users by 3,587.
(3.52% x 1,121,110 (all visitors for the relevant 6 months)) – (3.2% x 1,121,110 (all visitors for the relevant 6 months)) = 3,587

With the free-to-paid conversion rate remaining consistent at 3.9%, we can expect a proportional increase in the number of users converting from free to paid.

Assuming the volume of visitors remains consistent, for every 10,000 visitors, we should expect an additional 14 free users converting to paid subscriptions.
3.52 x 10,000 visitors = 352 free users
3.9% x 352 free users = 14 customers
This would produce an additional $420 in revenue per 10,000 visitors.
14 customers x $30 = $420

When scaled to accommodate larger visitor volumes and extended periods, this can present a significant opportunity for **revenue growth**.

*Keep in mind that other factors such as seasonality, marketing efforts, competition or serious world events will also influence the visitor count and consequently the rates. Hence, it is important to continuously monitor and adjust our strategies based on these variables.

5. Actionable Insights Based on our Analysis

To enhance the sign-up process, we recommend prioritizing social media sign-up options, particularly Google, which has shown high success rates. This involves restructuring the sign-up screen to highlight efficient alternatives and simplifying the email sign-up option, which currently present empty input fields. Utilizing single-click sign-up methods can enhance mobile user experience and increase the sign-up success rate.

Additionally, to address the email log-in errors, we suggest reducing minimum password requirements, improving the forgotten password sequence, including a “remember me” option, and/or implement an automatically generated strong password feature.

We also recommend conducting a test registration and login via Google on an Android operating system to troubleshoot any issues with pop-up windows. Potential solutions include reminder messages prompting users to switch browsers or disable ad-blockers if needed.

Lastly, we advise collaborating with the relevant department to investigate and resolve unknown errors associated with Facebook sign-up.

These measures aim to ensure a seamless sign-up experience and improve the visitor-to-registered conversion rate. Continuous monitoring and data analysis will facilitate ongoing optimization to meet user preferences.

A/B Testing

- **Null hypothesis (H_0):** Sign-up screens won't significantly affect the conversion rate.
- **Alternative hypothesis (H_1):** Emphasizing social media sign-up options on our web page will increase the visitor-to-free conversion rate.

Parameters:
Duration: about a month
Confidence level: 95%
Group size: over 300,000 visitors, equally split
KPI: Visitor-to-free conversion rate

Additional metrics:
- **Sign-up window open conversion rate:** visitors who have directly engaged with the sign-up screen's design
- **Average sign-up time**

Test subjects: All new visitors to visit our website within the testing duration. They will be randomly divided into two groups of equal size.
- **H_0:** Original version of the sign-up screen which involves manual email registration and highlighting the empty input fields; 160,196 visitors
- **H_1:** Modified version which involves prioritizing social media alternatives; 159,819 visitors

Critical metrics:
- Increase in crashes
- Drop in sign-ups
- Too many errors from a certain type

Monitoring critical metrics can help prevent a potential negative impact on the users and the business. For an example, if too many website visitors found the new sign-up screen unpleasant, the number of successful registrations through version B would be substantially lower than compared to the original version. In that case, we would suspend the test because it effects half of the visitor's experience, loosing potential customers.

Test results:

Free registration count:

- H_0: 3,147
  - Conversion rate: 1.96%
    (3,147 / 160,196) * 100 = 1.96
- H_1: 3,284
  - Conversion rate: 2.05%
    (3,284 / 159,819) * 100 = 2.05

Statistical power: 82.61%
p-value: 0.0343

H_1 is 4.5% higher than H_0

$\frac{0.0205-0.0196}{(0.0205+0.0196)/2}$ * 100 = 4.489

*A statistical power over 80% and a p-value less than 5% would corroborate our inference.
*SurveyMonkey's A/B testing significance calculator was used to find the statistical power and p-value.

Sign-up window open conversion rate:

- H_0: 5,620 sign-up screen visitors
  - 3,147 free registrations
  - 56% conversion rate
    3,147 / 5,620 = 0.56
- H_1: 5,181 sign-up screen visitors
  - 3,284 free registrations
  - 63% conversion rate
    3,284 / 5,181 = 0.63

Average sign-up time:

- H_0: 02:30 minutes
- H_1: under 02:00 minutes

Project Summary

We used MySQL to extract relevant data in the form of CSV files and Tableau to create a story-based dashboard for our analysis. This process helped pinpoint a potential obstacle

in the design of the sign-up screen, which we suspect may have contributed to a restraint in platform enrollments.

Our findings revealed that Google was the most favored sign-up method, whereas Facebook and LinkedIn were frequently overlooked, likely due to their relatively small button sizes on **mobile devices**. Despite its popularity, the email option presented poor performance, leading to a notable fail rate. To address this issue, we recommended building a new sign-up screen that emphasizes social media sign-up options.

To support our hypothesis, we conducted an A/B test comparing our modified sign-up screen to the existing one. The results confirmed our hypothesis, showing a **4.5% higher visitor-to-free conversion rate for the new design (H_1)** over the original (H_0), with a statistical power of 82.61% and a p-value of 0.0343. This indicates a **95% confidence level** in the improved performance of the modified sign-up screen. Additionally, visitors using the modified design exhibited a **higher sign-up screen visitor-to-free conversion rate (63%)** compared to the original (56%). Furthermore, users spent less time signing up on the new screen, highlighting its efficiency. We are confident that the enhanced sign-up screen will attract a larger user base, leading to increased paid users and revenue.

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