SaaS USER ANALYSIS

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I. Introduction

In today's competitive SaaS market, understanding user behavior is paramount to achieving sustainable growth. This report analyzes user behavior for our SaaS offering. Understanding how users interact with our product, from initial trial to potential paid subscription, is crucial for optimizing the user experience and driving conversions. This analysis focuses on the following key areas:

- **User Acquisition:** We analyze user acquisition channels and identify trends that inform future marketing strategies.

- **User Engagement:** We delve into feature usage patterns to understand how users interact with the product and identify opportunities for enhanced engagement.

- **Retention Analysis:** We assess user retention rates and pinpoint potential churn factors, allowing us to develop strategies to combat user drop-off.

By analyzing these aspects of user behavior, we gain valuable insights into how to improve the user journey, optimize the trial experience, and ultimately increase customer acquisition and retention. The findings presented in this report will be used to inform product development, marketing strategies, and user onboarding practices.

Using tools

- **BigQuery**
- **Google Looker Studio**

II. Original data

The data we're analyzing is organized into three main tables: *user_info* (user information), *events* (user interactions), and *geography* (user location). All three tables are stored with file type CSV.

The "*events*" table serves as a detailed record of user activity. It captures information on each user session, including timestamps, user IDs, and specific features used. This rich data allows us to comprehensively analyze user behavior and identify patterns in engagement during the two-month period of January and February 2023.

id	user_id	date	datetime	platform	volume	fee
2673	608	2023-01-01	2023-01-01 17:55:00 UTC	web	10.6771578…	0.008548565
2674	608	2023-01-01	2023-01-01 09:23:00 UTC	web	8.16117210…	0.006534165
2675	608	2023-01-01	2023-01-01 19:25:00 UTC	web	4.12951028…	0.003306253
2676	608	2023-01-01	2023-01-01 23:56:00 UTC	web	4.85424029…	0.003886501
6875	1695	2023-01-01	2023-01-01 14:24:00 UTC	android	0.37927524…	0.00030342
17974	3929	2023-01-01	2023-01-01 02:05:00 UTC	android	3.30145788…	0.002641505

Figure 1: events table preview

The "*user_info*" table acts as a central hub for all our user data. It stores essential information about each user, such as their ID, preferred platform (web, mobile, etc.), location (city and country code), and operating system (macOS, Windows 10, iOS 13, etc.). This data allows us to personalize the user experience and analyze which features are most popular.

It's important to note that login details, including the last accessed feature, session information, and time spent per session, are only recorded for suspended accounts. For active accounts, these fields are left blank.

id	user_id	platform	city	os	mp_country_code	created_date	last_login	feature	session	time_per_session
10	11	mobile	*null*	Android	BD	2022-09-25	*null*	*null*	*null*	*null*
18	15	mobile	*null*	Android	ID	2022-12-13	*null*	*null*	*null*	*null*
62	28	mobile	*null*	Android	PK	2022-12-08	*null*	*null*	*null*	*null*
64	28	mobile	*null*	Android	NL	2022-12-10	*null*	*null*	*null*	*null*
85	39	mobile	*null*	Android	BD	2022-09-21	*null*	*null*	*null*	*null*
110	48	mobile	*null*	Android	PK	2023-02-20	*null*	*null*	*null*	*null*

Figure 2: user_info table preview

The "*geography*" table builds upon the user information in the "user_info" table by providing additional location details. It stores specific data like city and country code, giving us a clearer picture of our user demographics and how users are geographically distributed across our platform.

Country	Code	Latitude	Longitude
Congo, the Democratic Republi…	CD	0.0	25.0
Equatorial Guinea	GQ	2.0	10.0
Ecuador	EC	-2.0	-77.5
Rwanda	RW	-2.0	30.0
Malaysia	MY	2.5	112.5
Maldives	MV	3.25	73.0

Figure 3: geography table preview

III. Overview

The SaaS of our company from January 1, 2023 to February 28, 2023 has the following operating statistics:

- Number of accesses: **139,055** accesses
- Number of users: **5,651** users
- Average accesses per day: **2,357** accesses/day
- Average users per day: **96** users/day
- Average volume per user: **588.88** volume/user
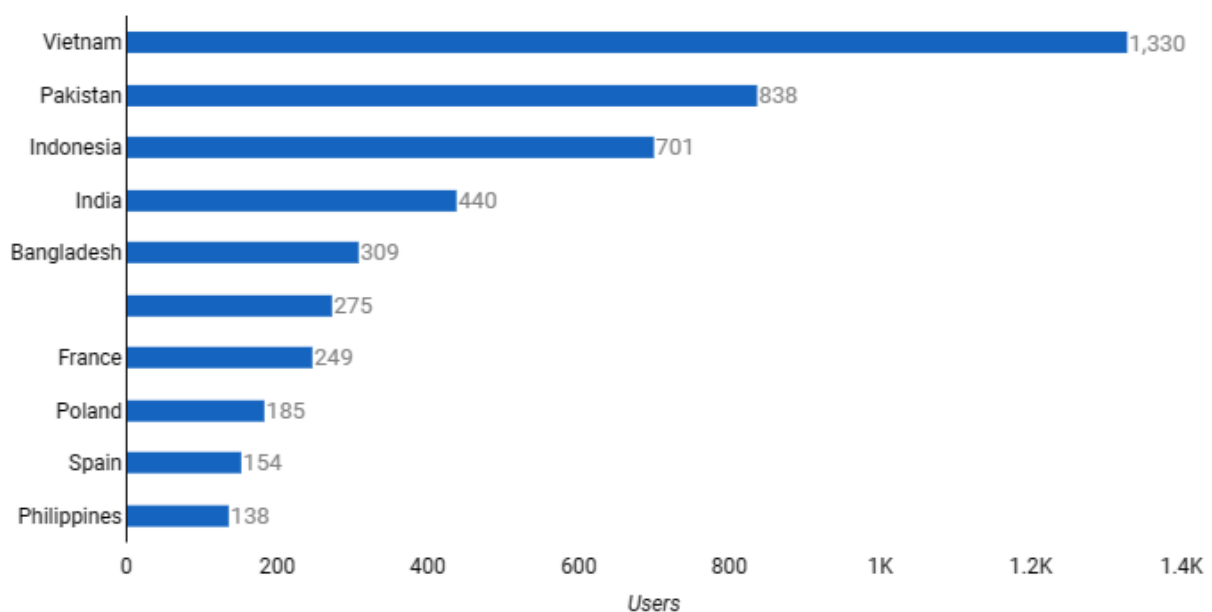- Average volume per work: **23.93** volume/work

Figure 4: Number of users using the service by Country

During this period, Vietnam (with **1,330 users**, ~ **23.5%** of total users), Pakistan (**838 users**), and Indonesia (**701 users**) are the three countries with the highest active users. These top 3 countries contributing more than **50.77%** of all users, this company's user base shows a geographic concentration.
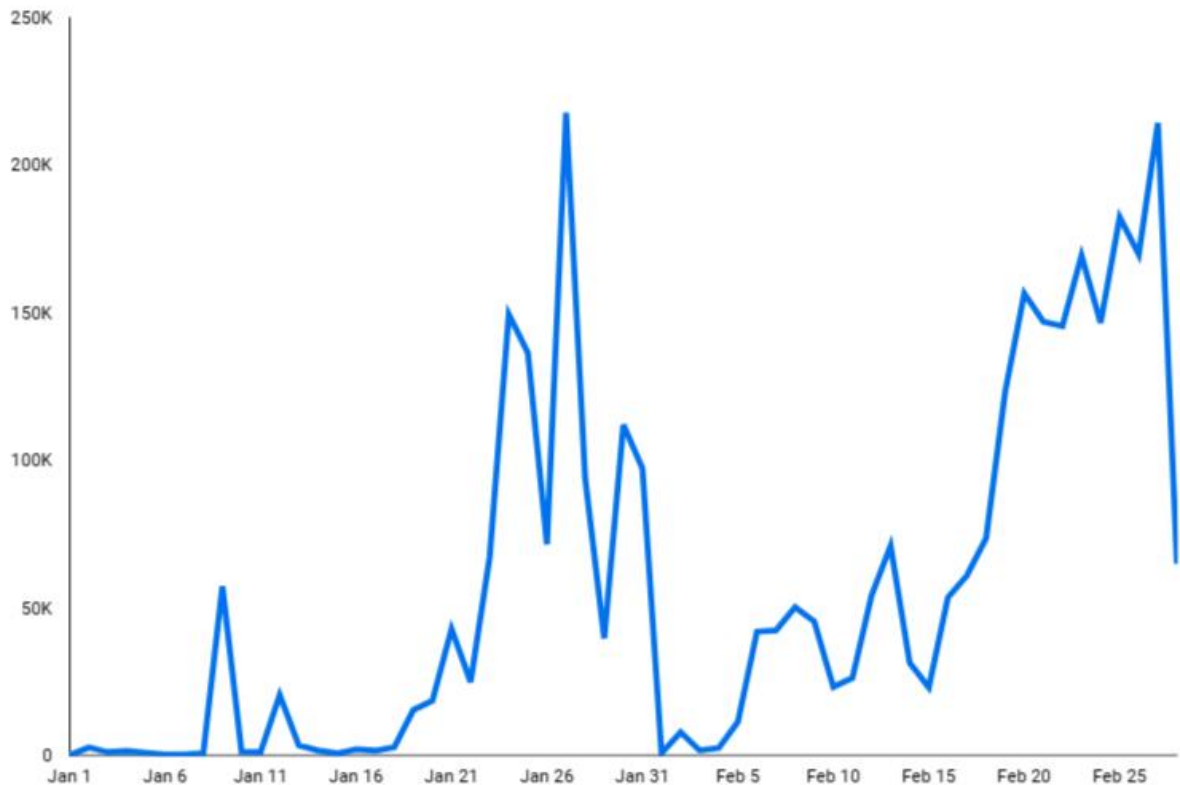
Figure 5: Daily Volume Trends

This chart provides a detailed look at the daily total volume experienced from January 1st, 2023 to February 28th, 2023:

- **Significant Fluctuations:** The data reveals significant fluctuations in daily volume, with some days exceeding 200,000 units and others falling below 1,000.

- **Potential Spikes:** January exhibits several particularly high volume days, reaching a maximum of nearly 218,000 on January 27th. February also has its share of spikes, with the highest volume recorded on February 27th, exceeding 214,000.

- **February Comparison:** February appears to have a generally higher volume compared to January, with a more consistent pattern of daily volume exceeding 20,000 units.

Our software exhibits a recurring pattern of usage, with peak activity concentrated **between the 24th and 28th** of each month, reaching highs of over 200,000 units. In contrast, the first half of the month sees significantly lower usage, typically ranging from a few hundred to less than 50,000 units daily. This trend suggests that users tend to favor our software towards the end of the month.
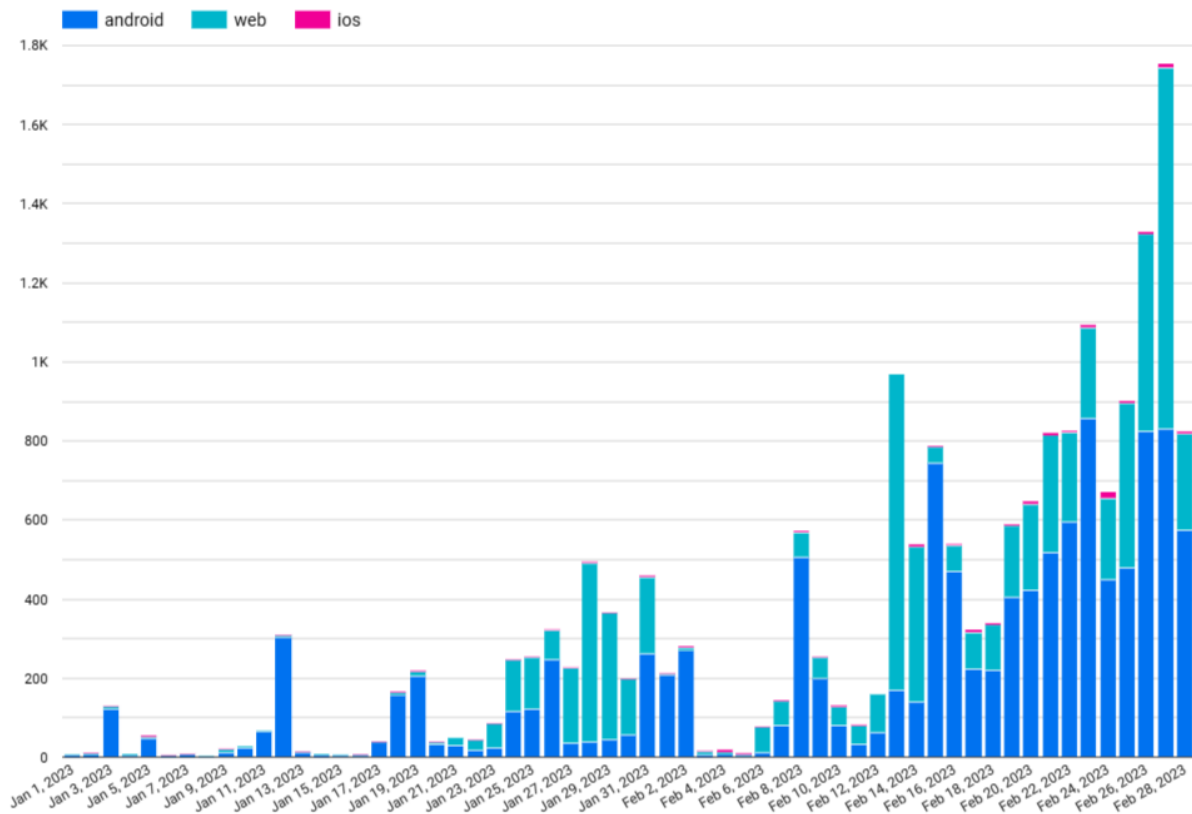
Figure 6: Number of users per plarform by day

The chart dives into user activity across platforms (iOS, web, and Android) by day. It reveals a trend where Android dominates, with a significantly higher number of daily users compared to iOS. Besides, the number of users using services through the website has increased steadily over time. This suggests an opportunity to capture a wider audience by optimizing our software for iOS devices, we can tap into this potential user base and expand our reach beyond Android and Website users.

IV. Retention rate

Retention rate measures how effectively a business keeps its customers engaged. It reflects the percentage of users who continue using the service or product after a set timeframe. **Retention rate** serves as a valuable indicator of how effectively the product or service engages users over time. The longer customers stick around, the higher the retention rate, which translates to greater potential for monetization. This is because repeat users present more opportunities to generate revenue through subscriptions, upsells, or other means.

From January 1, 2023 to February 28, 2023, I calculate the retention rate for each week, by dividing the period into 9 weeks.

Week	Start date – End date
Week 1	01/01/2023 – 07/01/2023
Week 2	08/01/2023 – 14/01/2023
Week 3	15/01/2023 – 21/01/2023
Week 4	22/01/2023 – 28/01/2023
Week 5	29/01/2023 – 04/02/2023
Week 6	05/02/2023 – 11/02/2023
Week 7	12/02/2023 – 18/02/2023
Week 8	19/02/2023 – 25/02/2023
Week 9	26/02/2023 – 28/02/2023

									retention_week / retention_rate	
Week	New Use…	Week 0	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Week 1	217	100%	12.44%	15.21%	10.6%	33.18%	20.74%	10.6%	8.29%	6.45%
Week 2	414	100%	57.49%	55.07%	77.29%	77.29%	79.47%	74.15%	3.14%	
Week 3	224	100%	27.68%	39.73%	47.77%	58.93%	60.71%	7.59%		
Week 4	1277	100%	28.35%	13.86%	45.11%	21.22%	37.04%			
Week 5	604	100%	29.14%	66.06%	53.97%	56.46%				
Week 6	162	100%	50%	41.98%	7.41%					
Week 7	1013	100%	34.65%	61.99%						
Week 8	1388	100%	44.02%							
Week 9	352	100%								

Table 1: Retention Rate

Weeks 2, 5, and 7 saw high retention rates, appropriate for the large number of users and volume on the mid-to-late days of the month.

Week 4 saw a high number of new users, with 1,277 users, but the retention rate was very low compared to other weeks.

➔ Discover the reasons and propose programs to attract and retain users.