

Stakeholder Report

Operation Analysis and Metric Spike Investigation

Project Name

Operation Analytics and Investigating Metric Spike: Advanced SQL Data Analysis

Project Goal

To provide actionable insights derived from operational, user, and email event data to empower various teams (operations, support, marketing) in making informed decisions. The ultimate aim is to optimize company operations, understand and respond to sudden changes in key metrics, and support overall business growth.

Detailed Analysis and Findings

Our analysis covered key operational metrics and user behavior, revealing several critical insights:

- **Job Processing Efficiency:** Daily job reviews per hour in November 2020 showed significant variability (34 to 218 jobs/hour), with an average of 126 jobs/hour. This indicates potential for optimization on low-performing days.
- **System Throughput:** While daily throughput fluctuates, a 7-day rolling average of 0.03 events per second provides a more stable and reliable measure for performance trend analysis.
- **Content Language Distribution:** In a sample of recent job data, Persian content accounted for the highest share (37.50%), with other languages (Arabic, English, French, Hindi, Italian) each holding 12.50%. This highlights a significant presence of non-English content.
- **Data Quality:** A thorough check confirmed no duplicate rows in the job data, ensuring data integrity for this critical dataset.
- **Weekly User Engagement:** User engagement demonstrated a positive trend from week 17 to week 30, peaking at 1467 users. However, a concerning decline was observed after week 30, signaling a potential issue with user retention or product stickiness.
- **User Growth:** Overall user registrations showed a consistent upward trajectory over time, indicating steady product adoption.
- **Weekly User Retention:** Despite consistent growth in new users, the weekly user retention rate showed a gradual decline. This suggests users are signing up but not consistently returning.
- **Device-Specific Engagement:** User engagement varies considerably across different devices. **MacBook Pro** users exhibit the highest average weekly engagement, while **Samsung Galaxy Tablet** users show the lowest.
- **Email Campaign Effectiveness:** The weekly digest rate (62-65%) and email open rate (21-24%) remained stable. However, the email clickthrough rate was lower and

more volatile (7.14% to 11.43%), while reengagement emails had a steady but modest clickthrough rate (3-5%).

Recommendation

Based on these findings, we recommend the following strategic initiatives:

1. **Re-engage Users:** Develop and deploy targeted campaigns to address the post-week 30 decline in user engagement. This could involve new feature rollouts, content updates, or personalized re-engagement efforts.
2. **Boost User Retention:** Implement specific programs and product enhancements designed to improve weekly user retention. Focus on demonstrating continuous value to users post-signup.
3. **Optimize Device Experience:** Enhance the user experience on high-engagement devices (e.g., MacBook Pro) to capitalize on strong user loyalty. Investigate and address usability issues on low-engagement devices (e.g., Samsung Galaxy Tablet) to improve their adoption and usage.
4. **Improve Email Clickthroughs:** Review and refine email content, calls-to-action, and targeting strategies to increase the clickthrough rate for all email communications.
5. **Strategic Content Localization:** Given the notable share of Persian content, ensure adequate resources for content localization and support for key non-English languages to serve our user base effectively.
6. **Continuous Monitoring:** Utilize 7-day rolling averages as a standard for monitoring key performance indicators to identify true trends and avoid overreacting to daily fluctuations.

Action

To execute these recommendations, the following actions are proposed:

1. **Marketing & Product Teams:**
 - **Q4 2025:** Launch a "**Value Reinforcement**" campaign targeting users with declining engagement. This will highlight recently added features and provide tailored content.
 - **Q1 2026:** Implement a **gamification or loyalty program** within the product to incentivize sustained engagement and reward returning users.
 - **Ongoing:** Conduct **UX audits** for specific device types (starting with Samsung Galaxy Tablet) to identify and rectify pain points impacting engagement.
2. **Content & Localization Teams:**
 - **Ongoing:** Prioritize **content creation and translation** for Persian and other high-demand languages based on current usage data.
3. **Marketing Team (Email Focus):**
 - **Q4 2025:** Initiate **A/B testing on email subject lines, body content, and call-to-action buttons** to optimize clickthrough rates across all email types.
 - **Q1 2026:** Implement **behavior-triggered email sequences** to deliver more personalized and relevant content, aiming to improve re-engagement.
4. **Data & Analytics Team:**

- **Ongoing:** Develop and disseminate **interactive dashboards** showcasing 7-day rolling averages for critical metrics to all relevant stakeholders.
- **Ongoing:** Maintain a **monthly data quality review process** to ensure the integrity and reliability of all analyzed datasets.

Conclusion & Reflection

This analysis has provided a robust, data-driven perspective on our operational efficiency, user lifecycle, and communication effectiveness. While we celebrate consistent user growth and strong engagement on certain platforms, the declining overall user engagement and retention are clear calls to action. By strategically focusing on re-engagement initiatives, retention improvements, device-specific optimizations, and more effective email campaigns, we are confident in our ability to convert insights into tangible improvements. This project underscores our commitment to data-informed decision-making and continuous operational excellence.