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Subject: Fraud Detection Strategy for Shopkick, Week 2 Update Memo – Onboarding and Analysis

As we dive into the complex fraud that Shopkick is facing, our primary focus was to develop an understanding of Shopkick's operations. Through 4 client meetings, including an onboarding call with each of the department's core to addressing fraud, we explored the challenges related to fraud detection, account blocking, and promo code/referral code misuse. These sessions allowed us to clarify project objectives, and preliminarily identify key influencing factors.

Week in Review (10/21-10/27)

- **Introductory Meeting (10/22/24):**
  - Introduced to the Trax and Shopkick's international team, clarified project objectives and main fraud challenges.
- **Engineering Onboarding (10/24/24):**
  - Familiarized with the Sift system and its dashboards/workflow.
  - Introduced to many of the customizable workflows features and the type of fraud that forced their creation.
- **Operations and Marketing Onboarding (10/25/24):**
  - Developed background in Operations through details of Sift's fraud scoring logic.
  - Introduced to types and methods of promo code and referral fraud that and how they affect Shopkick's operations and user experience.
  - Introduced to the variety of dashboards (both current and future) that Shopkick uses to track fraud and quantify its financial impact on the company.
- **Internal Group Meetings (10/23, 10/26):**
  - Downloaded the Shopkick's (and one of their main competitors: Fetch) apps to understand the reward earning process from a user perspective.
  - Broke down Shopkick's fraud issue into the following issue tree to identify critical factors and begin developing potential intervention methods.

Week Upcoming (10/28-11/1)

- **Follow-up Meetings (TBD)**
  - Schedule meetings with all 3 groups to dive deeper into the problem areas identified in the issue tree.
  - Develop specific requests for data including segmentation of detected fraud by type, number of fraud cases caught automatically vs. manually at each workflow.
  - Understand the financial impact of fraud on Shopkick's operations and solidify understanding of value of different forms of fraud.
- **Internal Group Meetings (10/28, 10/30)**
  - Continue to use Shopkick's app to better understand its functionality.
  - Prepare interview questions based on input(s) from research and meeting with you.
  - Begin cleaning, visualizing, and analyzing data of fraud for cost-benefit analysis of specific interventions.

Research & Brainstorm

Based on onboarding meetings with Product and Engineering, Operation, and Marketing teams:

	Engineering	Operations	Marketing
Team Function	Development and maintenance of the application including adding functionalities of the application and workflow creation.	Detect and prevent fraud by monitoring and blocking fraudulent activities (user accounts, receipts upload, etc.).	Retain users through improving promo code and referral program while avoiding potential fraud.
Tools/Data	○ Sift Dashboard ○ MySQL	○ Shopkick Admin Panel ○ Sift Dashboard ○ Tableau (visualize data)	○ Sift Dashboard ○ Tableau
Challenges	○ Difficulty in detecting fraud particularly return fraud	○ Suspicious account activation and late verification ○ Sift workflow limitation and manual overload ○ Multiple/fake receipts submission	○ Balance between fraud detection and user experience ○ Declining app use/churn

According to the information gathered from this week's introductory and onboarding meetings, along with our group discussion, we have broken down the fraud issue into different categories and created two issue trees:

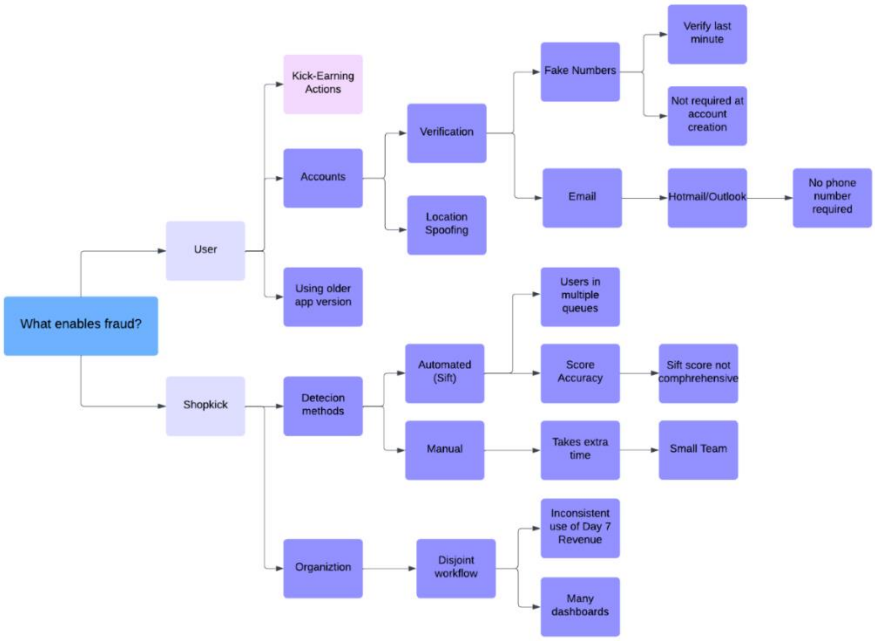

Figure 1 User vs. Shopkick Issue Tree

This issue tree illustrates the key factors contributing to fraud from both user and platform perspectives. It highlights how certain user behaviors, such as suspicious account activation and verification bypasses, lead to fraudulent activity. On the platform side, it emphasizes challenges in detection methods, Sift system limitations, and complex organizations that may cause fraud.

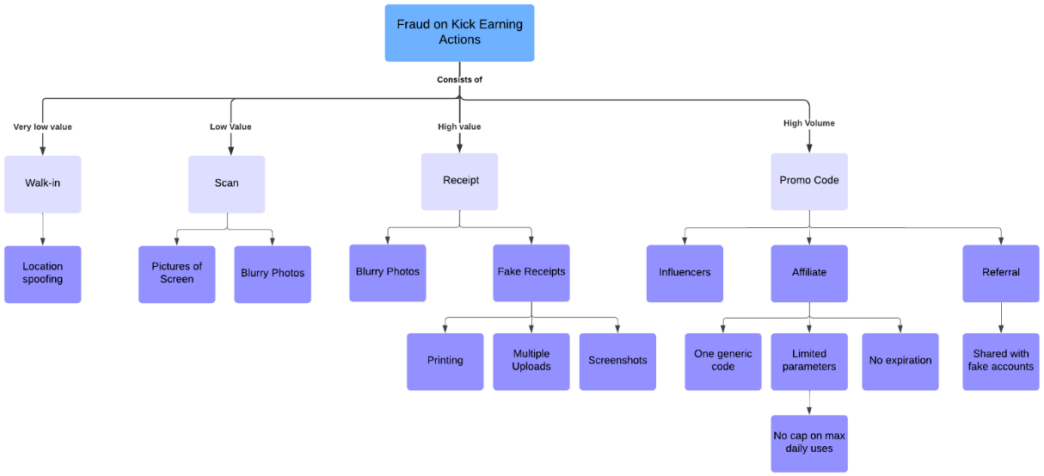

Figure 2 Kick Earning Action Issue Tree

This issue tree categorizes fraud types based on different kick-earning actions. It identifies specific loopholes in each action: low-value actions (like walk-ins and scans) where location spoofing and blurry images are common, high-value actions (like receipt uploads) involving fake receipts and multiple uploads, and high-volume actions (such as promo codes) including sharing referral codes with fake account and using generic codes with no expiration.

Conclusion

Overall, our team this week has established a foundational understanding of Shopkick and its fraud detection system Sift, clarified key fraud challenges from multiple perspectives. For next week, we will conduct further analysis of fraudulent activities, refine our understanding of their impact, deepen our research based on current information. This foundation will enable us to approach upcoming phases with clear objectives and actionable insights.