Transaction Efficiency, Risk & Network Performance Overview

By Loretta Chimezie
Data Analyst

Project Summary

Lead Bank is experiencing a drop in transaction approvals which may be caused by internal banking issues or external network connectivity problems; the recently upgraded fraud detection system which detects fraud but do not block it effectively; the heavily invested 5G network slicing performance and/or app prioritization. This project analyzes available transaction data and produces an interactive Excel dashboard with actionable recommendations.

Project Objective

1. Transaction demographics – total number of transactions, average transaction amount, average latency(ms), total amount, average bandwidth
2. Customer behavior – why are transfers failing? Identify the cause
3. Network performance – identify the best network slice that impacts speed and smooth transactions
4. Transaction trends – what time of day do we have transaction hike? Which network contributes to it? what other factors increases/decreases transactions
5. App prioritization – analyze channel distribution (desktop vs mobile)
6. Fraud leakages – why are the fraud detected transactions successful? Where is the problem coming from?

Dataset Overview

Transaction Overview.xlsx — Transaction ID, Transaction Amount, Transaction Type, Transaction Status, Fraud Flag, Device Used, Network Slice ID

Key Metrics (KPIs)

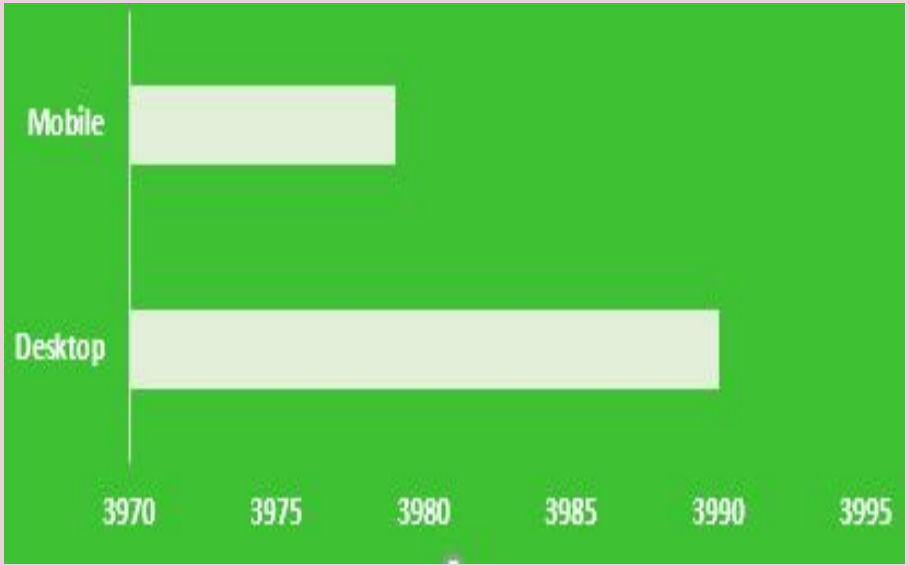
- Total Transactions analysed is 40,000
- Total transaction Amount is 99,812,984
- Average Latency is 77ms
- Average Bandwidth is 1528mbps
- Average transaction amount is 2495

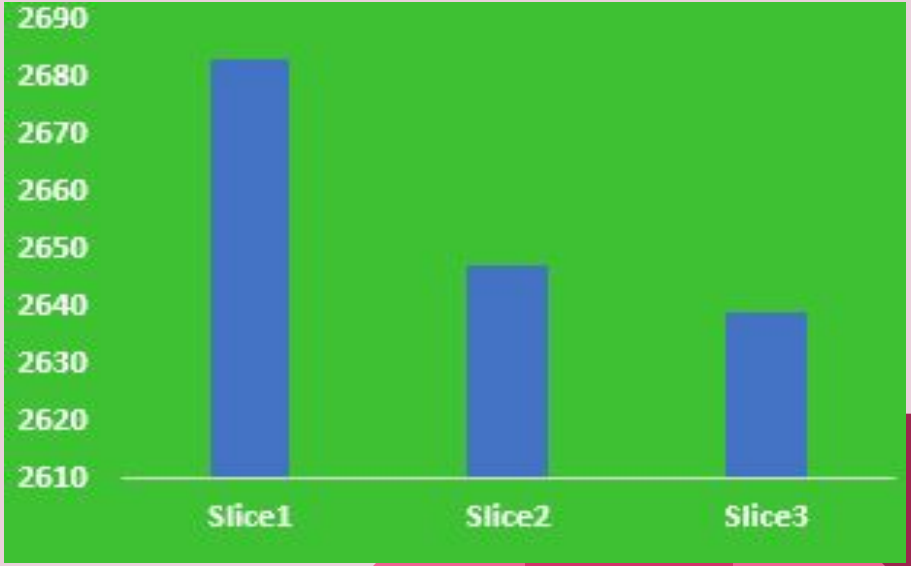
Dashboard Insights

- Slice 1 is efficient for mobile-app transfers, with 76 ms latency and an 80% success rate. It performs consistently all day and detects more fraud in deposit transactions.
- Slice 2 performs well for withdrawals and desktop-app transactions, with 77 ms latency, an 80% success rate, and strong fraud detection for transfers.
- There are high fraud leakages using the Slice 1 network with average latency of 77ms for transfers on the mobile app
- Slice 3 network has the highest bandwidth

Dashboard Insights contd

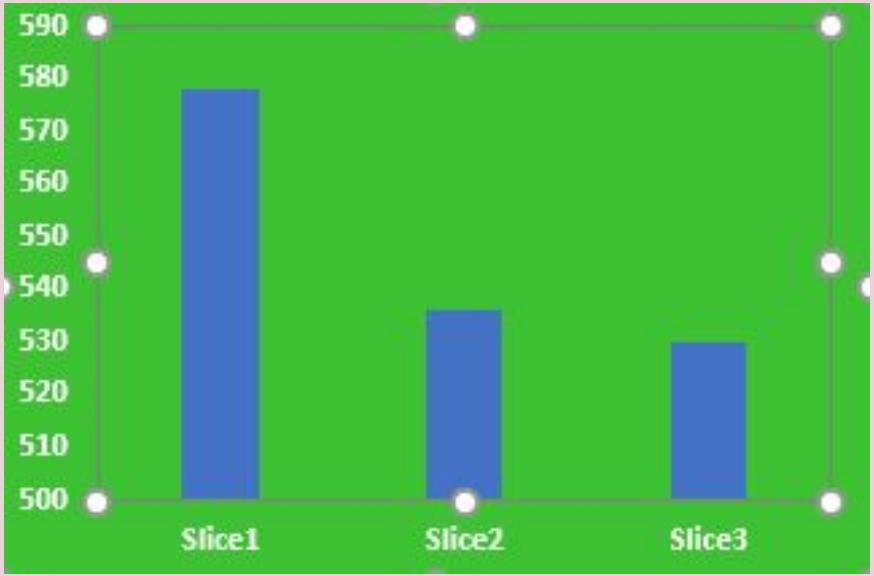
- Failed transactions occur more when using the desktop channel with Slice 1 network

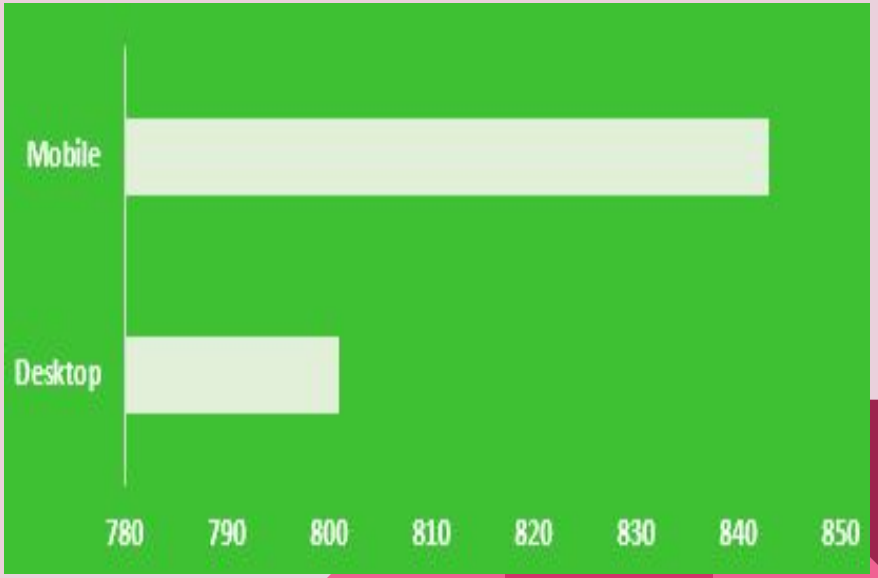




Dashboard Insights contd

- Fraud detected transfers are successful on the mobile device using Slice 1 network





Summary of Findings

- Slice 1 is faster than Slice 2
- The time of day has little effect on the transaction status
- Network latency for failed transactions is faster
- Slice 2 generates more income due to the high rate of successful transactions
- The mobile and desktop devices are both efficient

Recommendations

1. Slice 1 and 2 networks are both good depending on which task its performing;
   - Slice 1 works fine for transfers on the mobile app
   - for withdrawal using the desktop channel, Slice 2 is your plug
2. For more successful transactions use the Slice 2 network on the mobile device
3. Don’t encourage transactions on the mobile device when using Slice 1 as there’s high chances of fraud leakages
4. Both desktop and mobile devices works well
5. Navigate between networks where necessary
6. Upgrade on the detection machine should be carried out again as soon as possible

Conclusion

Overall, both Slice 1 and Slice 2 perform well when harmonized with their outstanding tasks, but seamless channel selection, strengthened fraud controls, and an urgent upgrade of the detection engine are essential for consistently successful transactions.

Thank you