Analyzing ATM Queue Conditions To Improve ATM Banking And The Customer Banking Experience

ATMs are a fundamental contact point for banking customers, even in today's age of digital banking and banking apps. Yet customers frequently complain about wait times in ATM queues. Banks must alleviate this problem to strengthen positive impressions of their brands and improve customer satisfaction scores. They need to ensure the ATM user experience lives up to digital-world expectations: it must be fast and hassle free.

Concerned about this issue, a major bank in Asia that has international operations asked Lynx Analytics to develop a method to understand queuing at its ATMs. Lynx created a convenient banking analytics solution that quantifies ATM queue lengths, peak times, and utilization; accurately estimates wait times for individual customers across all ATM touchpoints; and can be used to optimize queues based on actual and predicted demand. The bank has used the method to reduce complaints and drive notable improvements in customer satisfaction.

The Lynx queueing analytics solution is versatile. It can be used to optimize the number of ATMs in the network; guide ATM replenishment and maintenance; inform customers about ATM services via banking applications; and proactively manage customer complaints. All these applications will support customers better and improve customer satisfaction scores.

A Banking
Case Study

Analyzing ATM Queue Conditions To Improve ATM Banking And The Customer Banking Experience

Objective

Develop a convenient analytics solution to manage ATM queue length and wait times, enabling the bank to improve customer satisfaction and optimize the ATM network.

Increase customer satisfaction and overall experience

Optimize the ATM network

Develop a convenient analytics solution to manage ATM queue length and wait times

The Challenge

The bank wanted a solution that is convenient and accurate and can be used to measure queue conditions at any ATM location. The most readily available data—ATM and transaction logs—provide important details about each customer's banking activity but can't capture queue conditions at any given time. Queue analytics methods available in the industry also have significant drawbacks. Video analytics solutions used to track queues at ATMs, for example, require expensive video equipment and software, risk content-recognition errors that affect accuracy, and pose customer privacy issues. A more traditional option, in-person customer surveys at a sample of ATM locations, is manpower intensive and requires extensive training. Further, the responses are subjective and the surveys are site-specific: the results can't be generalized for a larger population of ATM machines given the high variability in ATM locations, physical settings, and services that can influence customer demand and the customer experience for any given machine.

ATM and transaction logs cannot capture queue conditions

Readily available analytic tools has significant drawbacks and pose customer privacy issues

Traditional surveys is manpower intensive and requires extensive training

The Solution

Lynx created a model using ATM transaction logs, which record the ATM location, type of transaction, amount, along with a timestamp for every transaction. Lynx then trained the model using observation data that had been collected by observers on-site at designated ATM locations. Lynx tuned the model to ensure high accuracy of predictions across all conceivable ATM situations, including ATMs with standard versus advanced functions; single-ATM locations; and locations with clusters of ATMs.

The model results are significant. Notably, the model successfully characterizes ATM experiences for individual customers at a single ATM for a designated time period, including the length of queue and time spent in the queue based on transaction logs without the need for any external data source such as surveys or video.

The model can consider different physical setups for ATMs. It can also characterize ATM activity for an all-day period in 15-minute intervals.

The Outcome

Lynx used the model to predict the presence of a queue with 95% accuracy, the presence of 5 people in a queue with 90% accuracy, and the average wait time in a queue with 80% accuracy.

Since the development of the model, the bank has used its queue analytics insights to improve the customer experience at thousands of ATM locations. Customer satisfaction has increased by approximately 6%, and complaints have dropped by 10%.

Predict the presence of queue with 95% accuracy

Increase customer satisfaction score by 6%

Reduce customer complaints by 10%
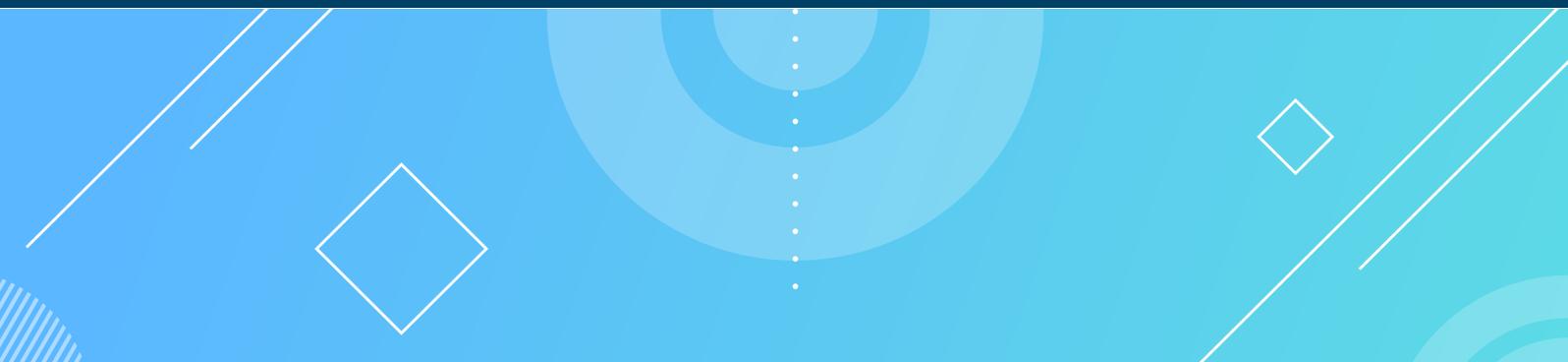
lynxanalytics

Lynx Analytics

Founded in 2010 and headquartered in Singapore with an engineering team based in Hungary, we bring value to companies across the banking domain with artificial intelligence and predictive analytics solutions to credit scoring, customer acquisition, fraud detection and more.

Facebook

LinkedIn

Twitter

Website